Google

This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

+ *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.

+ *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.

+ *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.

+ *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at http://books.google.com/

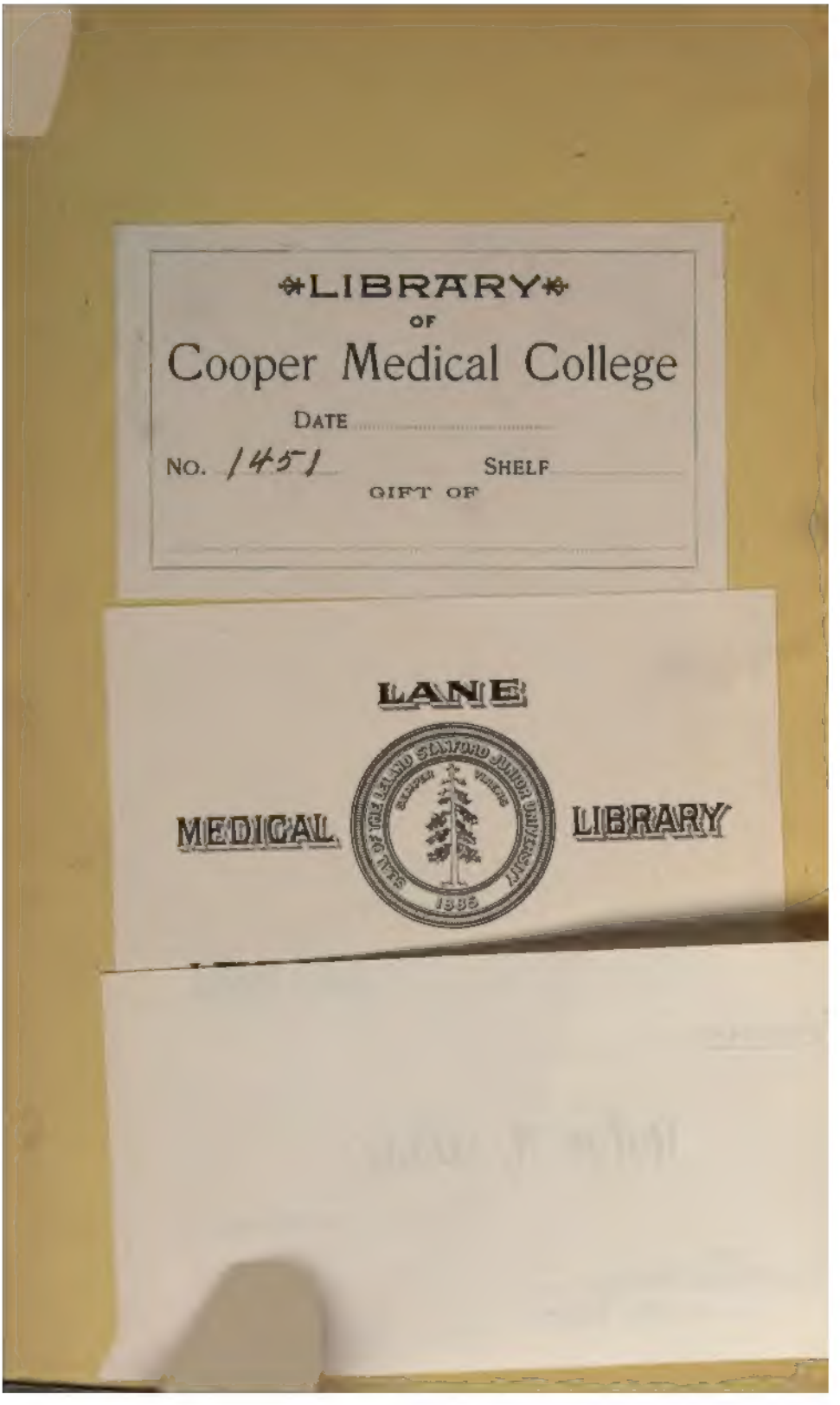
LANE MEDICAL LIBRARY STANFORD
2 45 0418 2158

LIBRARY
OF
Cooper Medical College
DATE
NO. 1451 SHELF
GIFT OF

LANE
MEDICAL LIBRARY
LEVI COOPER LANE FUND

COMPLIMENTS OF
Rufus P. Wade.

LIBRARY
OF
Cooper Medical College
DATE
NO. 1451 SHELF
GIFT OF



PUBLIC DOCUMENT. No. 32.

REPORT OF THE CHIEF

OF THE

MASSACHUSETTS DISTRICT POLICE,

FOR

LANE LIBRARY

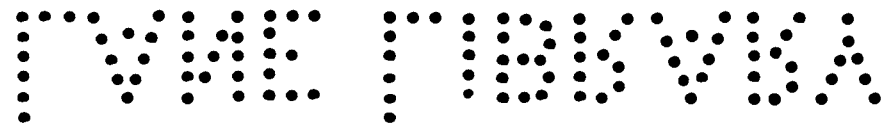
THE YEAR ENDING DECEMBER 31, 1889.

INCLUDING

THE INSPECTION DEPARTMENT AND THE DETECTIVE DEPARTMENT.

BOSTON:
WRIGHT & POTTER PRINTING CO., STATE PRINTERS,
18 POST OFFICE SQUARE.
1890.

45



I91.1
M42
1889
v.11

Commonwealth of Massachusetts.

OFFICE OF THE CHIEF OF THE DISTRICT POLICE,
BOSTON, Jan. 1, 1890.

To His Excellency J. Q. A. BRACKETT, *Governor of the Commonwealth.*

GOVERNOR: — I have the honor to submit a report of the duties performed by the District Police for the year ending Dec. 31, 1889.

Very respectfully, your obedient servant,

RUFUS R. WADE,
Chief of District Police.

Commonwealth of Massachusetts.

REPORT.

The laws of the Commonwealth require, as an important part of my official duty as Chief of the District Police, that I shall make a full report annually to the Governor of the work of this department; and I have the honor to submit my eleventh annual report, which comprises the record of the inspection and detective departments of said force.

Following the practice adopted in previous reports, and in conformity to the requirements of the statutes, I shall add such suggestions and recommendations as seem to be wise and necessary.

The number of the District Police remained as it was at the date of my last report; namely, thirty-three men, including the chief, of whom twenty are detailed for service in the inspection department, leaving twelve designated for detective work.

The Inspection Department.

This department consists of twenty inspectors. Its duties are clearly defined by the statutes, relating to the hours of labor; the protection of operatives from unguarded machinery; the employment of women and minors; the schooling of children employed in factories and workshops; the preservation of the health of females employed in mechanical, manufacturing and mercantile establishments;

reports of accidents in manufactories; safety appliances for elevators; provisions for escape from hotels and other buildings in case of fire; proper ventilation for factories and workshops, and uniform meal hours for children, young persons and women employed therein; the suppression of nuisances from drains, and provisions for water-closets, etc., for the use of each sex employed in factories and workshops, and various other sanitary regulations; the inspection of buildings alleged to be unsafe or dangerous to life or limb, in case of fire or otherwise; the submission to the inspector for approval of a copy of plans and specifications of any building designed for certain public purposes, as factory, workshop, mercantile structure, hotels, apartment houses, lodging or tenement houses, above a certain height; communication between engineer room and each room where machinery is run by steam, in every manufacturing establishment; proper safeguards at hatchways, elevator openings and well-holes in public buildings, factories and mercantile establishments; forbidding the use of portable seats in aisles or passageways in public halls, theatres, school-houses, churches, public buildings, etc., during any service or entertainment held therein; requiring fire-resisting curtains, approved by inspectors, for use in all theatres, etc.; and competent watchmen, lights in hotels, gongs or other proper alarms, and notices posted describing means of escape from fire in boarding and lodging houses above a fixed size, family and public hotels; fire escapes on tenement or lodging houses three or more stories in height; prohibiting during working hours the locking of any inside or outside door of any building where operatives are employed; public buildings and school-houses, in respect to cleanliness, *suitably ventilated and sanitary conveniences;* the weekly payments of wages by certain corporations to each of its employees; and sundry other matters not necessary here to be specified.

Among the earlier industrial laws of Massachusetts are those relating to the hours of labor, commonly called the ten-hour law, and the imposing restrictions upon the employment of children and young persons, who had not previously received a certain amount of schooling. The

history of the enforcement of these laws has been substantially that of every considerable change that has been subsequently made in the laws of our Commonwealth, relating to operatives and like classes of working people. In the beginning the new law was felt to be a hardship by those who were required to conform to it. It was denied that any real necessity existed for such legislation, or any actual advantage could come to those in whose favor it was made. It was predicted that only disaster could be expected by our manufacturing interests, by reason of the better chances for profit thereby afforded to factory owners in adjoining States. After some ingenious attempts in limited quarters to evade the provisions of those labor laws, which were defeated by amendatory acts and by the constructions of our courts; and after it became quite evident that no backward steps were to be taken, and that the anticipated evils were imaginary, all resistance ended, and cheerful submission to the new order of things became manifest. And it may be fairly asserted, that, if the fate of the statutes in question were now to be left in the hands of those who originally opposed their enactment, not an essential change would be made.

What has been the effect upon those operatives whose hours of labor have been lessened, and the young people obliged to work in factories, whose school privileges have been secured? It is safe to say that never in the history of Massachusetts has there been a more marked improvement in their physical condition, nor a more manifest spirit of contentment than at present. The ideal state of welfare has not been reached, nor is it likely to be, while inherent limitations control human endeavor. But, to remove some of the causes of discontent, which had been deepening and gathering force, until ominous threats and a chronic tendency to strikes and public disorder became almost fixed, was a wise exercise of legislative authority. It was a comparatively new idea at that time for a State to concern itself, as such, in the physical and intellectual well-being of the operatives within its borders. The advance of civilization may be temporarily checked, but cannot be defeated. Such progress carries with it benefits whose existence even had not been suspected.

When the demand was originally made for a law limiting the hours of labor for women and minors in manufacturing and mechanical establishments, the narrowest construction placed upon the movement was that it meant a little more leisure for those interested. The case was argued chiefly upon the ground that the hours of labor exacted were excessive, and possibly the measure was supported by many for that reason. But when the Legislature flung open the door of opportunity, whether the result was foreseen or not, it came to pass that new light was shed upon industrial problems. Fresh interest was awakened in the subjects of such legislation, and led to investigations which enlisted the sympathy and efforts of many friends of humanity.

The good results of shortening the hours of labor were soon apparent, in the substantial disappearance of discontent among those affected thereby; in the maintenance of the standard of factory productions, both as to quantity and quality; and in placing Massachusetts in the lead, where, by her history and her aspirations, she rightfully belonged.

The attention of successive legislatures to the subject of industrial reforms was the legitimate outcome of that earlier agitation which resulted in the passage of the so-called ten-hour law. In former reports I have traced the various steps herein indicated, and need not repeat the record. But it is instructive to note one fact; that, amid all the changes in our politics, and the inevitable tendency of legislative bodies to conservative action, from the time that the first labor law was enacted, there has been a steady adherence to the policy thus adopted, and a continued enlargement of its scope. No important statute in relation thereto has been repealed, and no modifications made that have not strengthened the purpose of the Legislature to make permanent the policy marked out by the earliest labor law.

If experience has shown anything in this matter, it has been the wisdom and statesmanship of the body of laws in our Public Statutes and additions thereto, which are known as industrial legislation. It is sixteen years since the ten-hour law was enacted; and it is entirely safe to say, that, if it were stricken from the statutes to-day, not an influential voice would be raised within our borders in favor

of the restoration of the order of things which that law changed. The increase of public interest in matters of this kind is a very significant fact. It is conceded that such laws, to be effective, must be rigid in their provisions, yet enforced with as much regard for the rights of persons and of corporations as is consistent with public welfare. Laws of this class may be made vexatious in their enforcement, without accomplishing their real purpose, which is the correction of admitted evils. Inspection may be frequent and minute; but the best results are reached when zeal is guided by discretion. *Good laws may be made ineffective by unwise administration.*

The Prevention of Elevator Accidents.

The greater number of elevator accidents are chiefly due to the employment of incompetent persons, many of whom are boys without knowledge or experience, and, by reason of immature age, lacking in judgment, and prone to be careless. It is only strange that such accidents are not more frequent. The great speed at which most elevator cabs or cars are now run of necessity increases the risks of accidents, and makes it more important that they should be in charge of responsible persons. In the event of the rope breaking or slipping, or any similar sudden exigency, when presence of mind is required, the situation is too serious to be controlled by a young boy. For, although there are safety attachments which act automatically and instantly, and before the car has attained any headway, it adds materially to the comfort of passengers to know that all the conditions of safety have been provided. There can be no other reason for the employment of boys for such service than that of lower wages. Yet a business house can be made to suffer a greater pecuniary loss by a single accident caused by a careless boy, than it would save by the lower rate of wages for a long period. Accidents often occur on freight elevators because no person is in exclusive charge of them. In many of our large mercantile houses, each one runs the elevator for himself. Among the number there must be some who are too careless to be trusted in such a place. A freight elevator should constantly be in charge of a competent man.

I am still of the opinion, expressed in my last report, that the speed of elevator cars should be regulated by law, with due deference to the public desire for quick transportation. I am satisfied that the rate of speed, especially of some cars which are lifted by hydraulic power, is far too great for comfort or safety.

Inspection of Summer Hotels.

At the numerous summer resorts, and especially along our Massachusetts coast, are many hotels almost universally built of wood, and accommodating vast numbers of guests. Anything more inflammable than some of these structures it would be difficult to find. A large proportion of them are lighted by gasoline manufactured on the premises. The kitchens form a part of the same building which contains the sleeping apartments. The means of extinguishing fire are often almost wholly lacking, and suitable fire escapes are the exception in many cases, and not the rule. During the past season I have caused a thorough inspection to be made of these summer hotels. Every hotel proprietor has been given instructions to furnish all the rooms in his house, which are not accessible to a balcony or other similar fire escape, with an adequate portable fire escape. This consists of a rope, belt, and a strong hook attached to the end of the rope. The hook is required to be securely fastened near a window. The appliance is so arranged that the belt can be easily slipped under the shoulder of a person, the rope let out of the window to the ground, and a safe descent made at a rate of speed which the person can control by a contrivance he holds in his hand. In every room where this fire escape is provided, we require that printed instructions regarding the use shall be displayed. It is claimed that women and children can safely reach the ground, as well as men, if they properly adjust the belt attached to the rope, and grasp the hand apparatus. The arrangement is simple and effective. As a greater protection to guests, we have ordered the proprietors to put up electric fire-alarm gongs, from twelve to sixteen inches in diameter, with all necessary facilities and appliances for giving a speedy alarm. Every hotel that has accommodations for fifty or more guests is compelled to

adopt these provisions for safety from fire. These gongs are in plain sight, capable of being heard throughout the house, and so placed that any person can give the alarm in case of fire.

Child Labor in Factories.

In previous reports I have made extended reference to this subject, and can now report generally that constant progress has been made in the right direction. Superintendents and mill owners are as a class intent upon rendering obedience to the statutes relating to the employment and schooling of child operatives. The objection to this class of legislation and the obstruction met by the inspectors come chiefly from the parents of such children. Determined to increase the family income by utilizing all available sources, the parents see only the apparent gain of a few dollars brought into their homes by the labor of their children, and they resist by artful means the attempt of the law to protect their helpless offspring. The possible earnings of their children outweigh all higher considerations; and their right to healthy, unrestricted growth, and exercise and recreation in the open air, and suitable training in the public schools, counts for nothing in the struggle for gain. The methods to circumvent the law are familiar to the inspectors, and but few cases, comparatively, challenge investigation, where formerly these subterfuges were numerous. There are undoubtedly cases where it would be no special hardship for children to begin early to learn to make a living by manual labor, but such cases are clearly exceptional. But the inherent right of the child to mental and physical development, under the best possible conditions, must be protected at all hazards, not only because its own highest interests are involved, but out of regard to the claim which the State has in behalf of its citizens. The common tendency of the employment of child labor is always to abuse. The competition as to hours of work and rates of compensation is calculated to lengthen the former and cheapen the latter. It is in recognition of this fact that laws have been enacted to fix the age at which children may be first employed, to restrict the number of working hours in a day,

and to provide for the employment of reasonable safeguards against accident. But the difficulties surrounding this branch of our labor problem are becoming less each year, because of the constant *decrease in the number under fourteen years of age*, who are employed in factories. It must not, however, be inferred that there is little if any occasion for continued vigilance to prevent violations of the law in relation to child labor. The census report of the Commonwealth for 1885 contains some suggestive statistics concerning child labor. Approximating accuracy, it must be remembered that there are, besides those enumerated, many very young children engaged in street occupations in all the cities and larger towns, principally in some form of peddling, and without license from the authorities; and a quite numerous class employed in offices and similar places. The policy, however, of the Commonwealth in respect to the labor of children employed in manufacturing and other establishments, is firmly settled. No child under thirteen years of age can be lawfully employed in such labor. By careful estimate I am enabled to state that about eighty per cent. of children between the ages of ten and fourteen years, formerly found in our manufacturing establishments, are now receiving an education that will improve their prospects for obtaining a livelihood, and better fit them for the duties of citizenship.

Fire Escapes.

In previous reports I have dwelt upon the action of the inspectors' department, in pursuance of their duty, to see that suitable fire escapes are provided in those situations designated by the laws. Constant watchfulness is required, by reason of the many new structures erected, and changes in existing ones which are frequently being made. So many sad accidents have been chronicled all over the land, attributable to the lack of means of escape from fire, that it would seem that no rational doubt could exist as to the positive necessity of suitable fire escapes for those inmates of upper stories who may be in peril from sudden and rapidly spreading flames. As I have had occasion to say in previous reports, the best preventive measure is a *properly con-*

structed, fire-proof building, one whose plan and workmanship are such that fire cannot easily start, nor, if once started, gain much headway. Recent legislation, requiring the depositing with the inspectors plans and specifications relating to the erection and construction of public buildings, public or private institutions, school-houses, churches, theatres, public halls, factories, workshops, mercantile and other establishments of that character, above a certain height, and employing ten or more persons in rooms above the second story, has imposed restrictions which experience long ago had shown to be essential. Even if buildings of the classes thus specified are constructed with a view to immunity from fire, it does not answer to neglect the additional precaution of suitable fire escapes; for there are unforeseen contingencies, as when a great fire occurs, which destroy all calculations as to safety from flames which have got beyond control.

The temptation is constant and powerful, with builders and owners even of the largest and most costly structures, to adopt cheaper methods, and take the chances of disaster from fire. It seems difficult for them to realize that what has so often happened may occur again, and that the proper means must be adopted, at any cost, to prevent not only such fires as originate from ordinary causes and are easily preventable, but those which may devastate a wide region

The Progress of Education.

There has been a marked progress under the educational laws of this State since 1879. At that time there was no provision in the law in relation to the acquirements of reading and writing the English language. By referring to the report of that year, it is seen that children were employed in various establishments, who had no certificates of schooling, some of whom were scarcely nine years of age, and who could not read or write. It was suggested during that year that young operatives should be obliged to attend school, and have a fair opportunity of acquiring the ordinary branches of education; that the State made its schools free to all, and they were the available means of imparting knowledge; and that a compulsory educational law, strict in its requirements, would be of great value and benefit to the child.

In 1880 an amendment was made to chapter 257, Acts of 1878, that "On and after the first day of May, 1880, no child under fourteen years of age shall be employed in any mechanical or mercantile establishment, while the public schools in the city or town where such child lives are in session, unless such child can read and write." In 1879 there were over 6,000 children employed in various establishments visited; in 1880, 10,500, and these were provided with certificates, as required by the statute. During the year 1880 it was found that a majority of the owners and superintendents of mercantile establishments believed in the education of their help, and that the law in relation thereto was wise and just. In 1881 the number of children employed was 11,368, and these were provided with certificates, as required by the statute. No opposition had been encountered to the just requirements of school attendance.

During the two years of the enactment of the educational law, a marked change had taken place in the opinion of those who were opposed to such legislation. It was found that the State was fully justified in interfering in behalf of education of children, on the ground of public policy. In 1882 the number of children employed was 8,145, with the required certificates. This shows a decrease in the number employed. It also shows the beneficial effects of the compulsory educational laws; it shows that its results were increased, and that the execution of the law was being enforced for the welfare of the youthful toilers who were growing up in ignorance. The policy of the Commonwealth in relation to education within its borders was such that all good citizens were grateful for the good results attained. The requirement that a child should attend school until its fourteenth year was without doubt a wise course of legislation, as can be seen in the decrease of the number of children under that age. In 1883 the number of children employed was 7,049, having the required certificates, — a decrease of over 1,000 children employed during this year; which shows the importance of the law bearing upon education and its progress. In 1884 the number of children employed was 7,365; of this number there were 1,078 between the ages of fourteen and sixteen, who could not read or write. In

1885–86–87 there was a marked progress under the then existing laws in regard to education. Chapter 433, Acts of 1887, under section 4, reads in part as follows:—

Two weeks next before the opening of each term of the evening schools the school committee shall, by posters posted in three or more public places of said city or town, give notice of the location of said schools, the date of commencement of the term, the evenings of the week during which said schools shall be kept, the provisions of section 2 of this act, as to forfeiture for non-compliance with said section, and such regulations as to attendance as they shall deem proper.

Thus it will be seen that the great improvement in the law, especially in the direction of attending evening schools, leaves no loop-hole open to enter any objection, or any reason why there is no source available in the direction of gaining at least simple knowledge, or the more simple rudiments of the English language. The attendance at these evening schools has increased to a very large extent, so much so that the schools in very many sections of the State have become over-crowded. It also shows that it was a wise piece of legislation, and that thousands became benefited thereby. The progress under the law has been great beyond expectation.

Chapter 348, Acts of 1888, provides for an age and schooling certificate. The age certificate must give all the particulars in relation to parents or guardian, name of child, where born, name of town or city, name of county if known, State or country, day of year of birth, number of years and months old, height, complexion, etc. In case the child is under fourteen, there must also be added in the certificate that he or she can read at sight, and can write legibly simple sentences in the English language; and that he or she has attended a public, private or day school, according to law, at least twenty weeks during the year next preceding this date, and that the last twenty weeks of such attendance began on such a date, etc. If attendance has been at a private school, the signature of the teacher must be attached. It also provides that, in cities or towns having superintendents, certificates must be signed by such super-

intendent of schools, or by some person authorized by him in writing; in other cities and towns it must be signed by some member or members of the school committee, authorized by a vote thereof; also, that the person signing the certificate shall have authority to administer the oath provided by law, etc.; and such oath may also be administered by any justice of the peace.

Up to this time it has been found that there has been a decrease in the employment of those children that could not read or write, and the tendency is to better conditions, especially in the direction of at least simple and plain education among the rising generations. Under the above law, little if any fraud can be practised, particularly in the case of false certificates.

Looking back over a period of ten years, it can be seen by a careful observer that progress has been made in a most wonderful and beneficial degree, until to-day the Commonwealth of Massachusetts can boast of the best system of compulsory education of any State in the Union.

There was a time when the education of both sexes was sadly neglected, when it was almost altogether overlooked. Now there are schools where their mental powers can be used for acquiring all the useful branches of knowledge; and, where their minds are properly directed, they can obtain every branch of knowledge which can improve or adorn the human mind. There can be no hesitation in asserting that the obtaining of knowledge by the young mind will create an influence which may be powerful not only over the tastes and manners of society, but over the moral *principles and character of mankind*. And therefore the young ought to have their minds enlightened in every branch of such knowledge which may have a beneficial influence on their present conduct and their future destinies. A very considerable amount of education might be obtained which would enlarge the range of the minds of the young, promote their sources of enjoyment, and furnish a broad foundation for future usefulness and improvement, and render them more useful in society. It will also render them more expert in the mechanical professions, and fit them for becoming informed in the arts and sciences. Now that more

attention is paid to the cultivation of the human mind among all ranks, education may be expected to make an active progress in the course of moral and intellectual improvement. In a peculiar manner it should be impressed upon the minds of the young, that the instruction they receive and the studies in which they now engage are intended, not merely to qualify them for the business of the present life, but likewise to prepare them for the facilities and improvements which may be sought for in all branches of industry.

Sanitation and Ventilation in Public Buildings and School-houses.

It would seem to be incredible, in these days of general enlightenment, that there could be opposition to any rational plan of providing sanitary methods and suitable ventilation in public buildings and school-houses. Popular science has made familiar the evils of bad drainage, insufficient ventilation, and other sources and feeders of disease. To argue in the face of the lessons of universal experience seems to be as useless a task as an attempt to prove the multiplication table. No sane man knowingly drinks dirty water. Why should he breathe foul air? Is the pollution less objectionable because the means to prevent it occasion a little trouble, and sometimes expense? But what shall be said of the daily infliction of bad air upon many thousands of school children, who, if they knew the perils they are subjected to, are powerless to escape them? In this connection I desire to call attention to chapter 149, Acts of 1888, entitled, —

An Act to cause proper sanitary provisions and proper ventilation in public buildings and school-houses.

Section 1. Every public building and every school-house shall be kept in a cleanly state and free from effluvia arising from any drain, privy, or other nuisance, and shall be provided with a sufficient number of proper water-closets, earth closets or privies for the reasonable use of the persons admitted to such public building or of the pupils attending such school-house.

Sect. 2. Every public building and every school-house shall be ventilated in such a proper manner that the air shall not become so exhausted as to be injurious to the health of the persons present

therein. The provisions of this section and the preceding section shall be enforced by the inspection department of the district police force.

SECT. 3. Whenever it shall appear to an inspector of factories and public buildings that further or different sanitary provisions or means of ventilation are required in any public building or school-house in order to conform to the requirements of this act and that the same can be provided without incurring unreasonable expense, such inspector may issue a written order to the proper person or authority directing such sanitary provisions or means of ventilation to be provided, and they shall thereupon be provided in accordance with such order by the public authority, corporation or person having charge of, owning or leasing such public building or school-house.

SECT. 4. Any school committee, public officer, corporation or person neglecting for four weeks after the receipt of an order from an inspector, as provided in the preceding section, to provide the sanitary provisions or means of ventilation required thereby shall be punished by fine not exceeding one hundred dollars.

SECT. 5. The expression "public building" used in this act means any building or premises used as a place of public entertainment, instruction, resort or assemblage. The expression "school-house" means any building or premises in which public or private instruction is afforded to not less than ten pupils at one time.

SECT. 6. This act shall take effect upon its passage.

The foregoing act was approved March 20, 1888. As soon thereafter as practicable, the necessary orders were issued by me to the officers of the inspection department assigned for this important duty, to make diligent investigation throughout their respective districts, and to promptly report in detail all facts relating to the subject covered by the statute. Complaints had been presented by responsible parties, pointing out gross disregard of the health of pupils of certain public schools, who were exposed to the evils of foul water-closets, defective drainage, and insufficient ventilation. It became my duty to see that these allegations were carefully and impartially inquired into. As the result o such inquiry, I found that ample ground existed for complaint, under the statute. It has been the rule of my official action, from the day of my appointment as Chief of the District Police, to use the utmost courtesy and forbearance

compatible with the impartial discharge of my duties. I have taken pains to notify persons and corporations believed to be amenable under the law, in order to afford proper opportunity for compliance therewith. I have been especially careful in the enforcement of recent statutes; because, while it is true that ignorance of the law excuses no man, I am bound to use the authority confided to me in a reasonable manner. It is not the wisest policy to invite resistance to the law for the sake of overcoming it. An intelligent citizen, or school committee, must be presumed to be willing to render obedience to the law, whatever private opinions may be entertained as to its wisdom or necessity. We live under a government of laws and not of men, and personal considerations must not be allowed to pervert the judgment or render partial the action of a sworn officer of the law. Nor must obedience to law be measured by prejudice, nor the supposed exigencies of local economy or pride.

It must be conceded that it is not a pleasant task for local authorities to admit that they have — unwittingly, it may be — brought themselves within the penalties of such a law as the foregoing cited. They are supposed to be interested to protect their own children, the pupils of their own schools. It is not strange, therefore, that the first impulse should be to deny stoutly that the evils complained of exist at all. Then, if the evidence cannot be got rid of in any way, nor the accusation refuted, it is not an uncommon resort to say, "We have our local or municipal inspector of buildings, and we have our local boards of health." The laws which convey authority beyond them should be amended or repealed. So the argument is presented to the Legislature, and that body is asked to pass an act exempting the aggrieved community or its officials from the operation of a most beneficial law, — a statute which, if unwise for one city or town, is in the nature of the case unwise for all. Local option, in dealing with sanitary evils affecting public buildings and school-houses, will hardly be adopted by a Commonwealth which long ago adopted an entirely different policy in matters relating to the public health. The results of entrusting solely to local authorities the correction of sanitary evils, and giving them final jurisdiction thereof,

became so apparent some years ago, that the best medical opinion of the State felt called upon to find some remedy for it. Nuisances were allowed to exist, not because they were not recognized as such, but because the town or city authorities lacked the courage to suppress them.

Local and political interests clashed with the public good. There was no summary power to abate public nuisances. Such process as could be employed was uncertain of application and tardy in action. When the facts were brought to the attention of the Legislature, and the defects of existing laws made apparent, the result was the establishment of the State Board of Health, with powers commensurate with the magnitude of the task before it. Probably no executive body in Massachusetts possesses under the law more arbitrary and summary power. And it should be so. The health of the community is a paramount consideration. If a city or town becomes aware that its school-houses are in a bad sanitary condition, it would seem to be a fair presumption that proper steps should be taken at once to improve them. But the inertia to overcome in such cases is considerable. Suppose it should appear that several school-houses in a certain city were seriously defective in drainage and ventilation; that the water-closets (located, it may be, in the basement, and directly under the rooms in which scores of young children are assembled) send forth constantly the foulest odors. Complaints of teachers eventually make some impression upon the superintendent of public buildings, and he communicates at his leisure with the committee on public property of the city council. They discuss the subject, and perhaps refer it to the sub-committee man of that section; and, when he finds time to attend to it, he makes a personal examination, and reports back to the full committee, which, after further discussion, instructs the superintendent of public buildings to cause the necessary work to be done. But a new difficulty presents itself. That official reminds the committee that the appropriation for his department is so nearly exhausted that he cannot undertake this additional work. What is to be done? If the complaints are persisted in, and the danger of delay too great, perhaps a small amount will be trans-

ferred from a more plethoric appropriation to the appropriation for school-houses and repairs, and something may be done. If not, the subject goes over to the next city council, and new men will have to take it up and wrestle with the problem of how to prevent sickness, caused by bad drainage and imperfect ventilation, without spending a considerable amount of money. If the present law should be amended, as was attempted in the last Legislature, by providing for a board or boards of arbitration, to be chosen for each case as it arises, an ingenious scheme, tending to render the law inoperative, will have succeeded. If the board of arbitration contemplated should be composed of citizens of the city or town complained of, that in effect is making them judges of their case.

There is ample remedy now against any arbitrary, corrupt or unjust use of power on the part of the inspection department of the District Police, and the law ought not to be emasculated at the demand of those who most need its impartial and vigorous enforcement. In my opinion, no statute more vitally important to the health and welfare of our school children, has been placed on our book of laws in recent years; and a fair trial of its workings is demanded by every consideration that can appeal to the Legislature.

When the comparison is made between the school-houses that were in use half a century or more ago, and those of the present day, it is the popular belief that the modern structures are beyond all criticism, both in respect to convenience and architectural adornments. The little red school-house stood at the forks of the road. It consisted of a single room, upon whose walls hung the outer garments of the pupils. It was heated by a stove, placed in the centre and supplied with lengths of hickory or oak. Its only means of ventilation were the windows, which, after the stove had been well fired up, and the scholars nearest to it were roasting, were opened for the admission of outside air. Heating and ventilation were thus of the simplest kinds. Now, except in the remoter and poorer towns, of small population and limited resources, the school-house is built after the most approved plans of the skilled architect, reference being had to the best ideas of science and the most obvious lessons of experience.

This, at least, is the conceded purpose of those to whom is entrusted the important duty of erecting proper structures for school uses. In our cities, it is a fact of common knowledge that very large sums of money are spent for a single school building, and no efforts are spared to secure satisfactory results. It remains true, however, that in the towns throughout the State the inspectors found many school-houses in an unwholesome condition, arising from filthy out-houses, cesspools, broken and choked drains, lack of suitable provisions for ventilation, and other like causes. In some cases the privies, located in the school yards, are so near the school-house that the stench is necessarily drawn through the open windows into the building, and the air breathed by the occupants is loaded with impurity. Some of the larger school-houses, which are attended by several hundred pupils, are provided with open trough urinals in the basement, which are supposed to be flushed out with water daily by the janitor; and the water-closets in the same apartment, although connected in some cases with the sewer, are so poorly arranged or maintained that they are a constant nuisance. In one of the smaller cities there was a bad odor in the yard of a certain school, and investigation disclosed the fact that it came from a sink pipe which led directly into the city sewer, without any sort of a trap, and that the opening of this pipe was almost directly under a ventilator leading up into the building in which more than five hundred children assembled.

The sanitary condition of the school buildings in the State reveals a condition of things which demands thorough and radical treatment. No false notions must be permitted to prevent publication of the facts, nor the application of the proper remedy. It is always difficult to secure *prompt action by the local authorities in cases which call for a liberal expenditure of money.* An increase in the rate of taxation is as much feared in some quarters as the approach of an epidemic. A department which has marked out its line of work and subdivided its share of the annual municipal appropriations, does not like to be called upon to revise its plans, and prepare for emergent occasions. A motion to refer to the next city government is always in order.

It seems a strange inconsistency that allows the expenditure of a vast sum of money for a school-house which is deficient in the matter of ventilation; yet, strange as it may seem, some of the worst failures of suitable ventilation are found in structures so costly, that, if the aggregate sum were distributed for the erection of the plain school-house of a former generation, it would provide a number sufficient to supply all the towns in the Commonwealth.

In recent years great attention has been paid to the science of heating and ventilation of houses, and of school-houses and other public buildings. A common agreement has been reached by all competent authorities, as to the elements comprising the evils of imperfect ventilation, and the close connection between proper heating and proper ventilation. The two cannot well be separated in any successful scheme.

It is well known that close stoves, for instance, do not assist materially in promoting adequate ventilation; for the quantity of air they withdraw from the room is simply what is required for combustion, and the temperature of the room is not nearly uniform at different heights, because of the sluggish circulation caused by such means of heating.

One authority, whose experiments were made in Canada, says that "in a stove-heated basement room over a cold cellar he has frequently seen water freeze on the floor, when the temperature of the air at the ceiling was one hundred degrees; and he has often observed a difference of four and one-half degrees in the temperature of the air for every foot of height in a stove-heated school-room, sixteen feet high, which was exposed on two sides to outside air at zero." "But, if there is a casing with a space between it and the stove for air to enter from near the floor and issue at the top of the stove, a rapid circulation of the air of the room is produced, and the temperature equalized." This system of ventilating school-rooms heated by stoves I have seen in operation in some of the school buildings in the State. This shows conclusively the inseparable connection between the heating and the ventilating apparatus in buildings.

It is an indisputable fact that the air is never found absolutely pure in densely populated places nor in occupied apartments. In such localities it is always a question of

degree. The act of respiration and the emanations from the person, which, although insensibly, are constantly taking place, vitiate it to a serious extent. But all good air contains about four parts of carbonic acid gas to 10,000, which amount may be slightly increased by the admixture of human breath, without rendering it close and offensive. Practically each person vitiates 3,000 cubic feet of air in an hour, and hence this amount must be drawn out in the same length of time, and its place supplied by an equal quantity of pure air.

Suppose fifty children are confined in an unventilated school-room, twenty feet by thirty, and ten feet high. These children will spoil about one hundred and fifty feet of air in one minute, or nine thousand feet per hour, or *twenty-seven thousand feet in three hours*, a usual half-day's session. But the room holds only *six thousand cubic feet of air, the whole of which these children would spoil in forty minutes.* Does not this simple fact show the absolute necessity of ventilation?

Air is unfit to support life, and is sure to cause weakness and disease, when, loaded with such impurities, it is drawn into the lungs and absorbed. A slight degree of such atmospheric impurities renders it unfit to support life; and, if it is breathed constantly, the results are sure to be impairment of physical vigor, and ultimately disease and death. It has been estimated by competent authority that at least forty per cent. of all fatal diseases are indirectly due to impure air. Experiments have shown that the carbonic acid of respiration, though heavier than air of the same temperature, does not fall to the floor of a warm room. A larger proportion of all the impurities from the breath is found in the higher and warmer parts of a heated, unventilated room, than in the lower parts; a condition which is reversed, however, if the room is allowed to cool. The problem of introducing into a room the large quantities of properly warmed air required for ventilation, without producing violent currents or sudden changes, is beginning to be better understood. A reliable natural ventilation, one which occurs without artificial assistance, cannot be obtained, so experts have said, except when a difference of temperature exists between the in-door and the out door air. Open windows therefore cannot be relied upon to effect a proper

change of air, unless the room be kept either warmer or cooler than the atmosphere outside. Open fire-places and open stoves are partially effective in winter, if suitable fresh-air inlets are provided; but the chimney flues must be heated in summer also, or they will then cease to work. *It is no part of the duties of the inspection department of the District Police to designate what particular system or method of ventilation is most effective, and to insist upon the adoption of the selected scheme.* The results which can be reached and determined after proper investigation are what we expect and require. The best methods can be ascertained, and have been shown to be such by proper tests.

In my report of last year I stated that the enactment of chapter 149 of the Acts of 1888, entitled, "An Act to cause Proper Sanitary Provisions and Proper Ventilation in Public Buildings and School-houses," imposed upon the inspectors' department an important and onerous duty. The record of another year confirms my impressions as to the manner in which our efforts to enforce that law would be met. The experiences of the inspectors agree in respect to the opposition made by those who should be the first to welcome such legislation, and to aid in the correction of the evils complained of. Our inspectors in many quarters have been met with unjust criticisms, refusals to make the necessary appropriations, and attempts to belittle the work which, acting under orders and in pursuance of law, they have endeavored to perform.

That gross defects in ventilation of school-houses exist, which imperil the health and lives of the children and teachers of our public schools, and that there are rational, practical and summary methods of removing such evils, admit of no dispute. The facts are too well known to be successfully denied; and the department must act upon the facts, and enforce the law as it stands, with or without the co-operation and sympathy of local authorities. It is a matter of common knowledge, that during October of the current year a complaint was made, upon information furnished by an inspector, against members of the school committee of the town of Revere, for refusal to comply with the requirements of the law in relation to ventilation of school buildings. The

simple fact of the prosecution is doubtless better known than the facts which led up to the complaint and trial, and which should be understood. The records of this office show that on the twenty-ninth day of January, 1889, the first order of this department in respect to proper ventilation of the school-houses of Revere was served on the chairman of the school committee; that on the seventeenth day of May, 1889, by reason of a change in the chairman of the school board, the second order in relation to the same matter was served, and also on the chairman of the selectmen of the town; that on the eighteenth day of June, 1889, the *third* order in the same case was served on the chairman of the selectmen, the town treasurer and the town clerk, all of said Revere. It will be seen that it was only after repeated efforts to secure compliance with the law, and the most extreme patience and discretion on the part of the inspector, and not until it became apparent that the local authorities intended to evade or disobey the law and bring it into contempt, were steps taken to bring the facts to the attention of the court. It ought to be added that on the twenty-second day of March, 1889, William E. McClintock, city engineer of Chelsea, an expert employed for the purpose of investigating said complaint, and instructed by said school committee of Revere to examine the premises and to report his views and opinions, *reported to said board that the complaints were well founded.* The case was heard in the police court in Chelsea, Sept. 28, 1889, and the decision was given Oct. 5, 1889. The judge said: —

The evidence introduced tends to show that the ventilation in the Winthrop Avenue school building in the town of Revere is deficient. The means of supplying heat to the rooms and the manner of ventilating are such that while the rooms are occupied by any considerable number of people the tendency must be to exhaust the pure air. It is urged upon the court that the air becomes exhausted in such a way as to become injurious to the health of the occupants of the school-rooms, and the court is inclined to believe that such is the possibility.

In order, however, to sustain this action, the court must go farther than this, and find that the building in question is not ventilated in a proper manner, so that the air shall not become so exhausted as to be injurious to the health of the persons therein.

That is to say, the court must find from the evidence that there is that degree of exhaustion injurious to health.

In the absence of any scientific examination as to quality in the analysis of the air, and the absence of proof that any injurious effects have arisen from bad air and the condition of the rooms, the court must find that the examination by the government has failed.

The judge admitted that some action should be taken by the town of Revere in reference to this building; the manner of the ventilation should be so changed that there would be no possible danger to the health of the children placed under their care. In this connection attention is respectfully called to the following: —

BOSTON, Oct. 28, 1889.

RUFUS R. WADE, Esq., *Chief of the District Police.*

DEAR SIR: — The following are the results of my analyses of the air taken from certain school-houses in the town of Revere. The samples were taken on the morning of Oct. 24, 1889.

1. Air from the Winthrop Avenue school, Revere. School-room of Miss Adams. Number of pupils, fifty-two; time, 10.15 A.M. The atmosphere of this room contained 33.94 parts (thirty-three and ninety-four hundredths) of carbonic anhydride (carbonic acid gas) in 10,000 of air. The odor on entering this room was strong and unpleasant, and produced a sensation of oppression and "closeness."

2. Air from the Beachmont school, Revere. School-room of Mr. C. W. Bean. Number of pupils, thirty-eight; time, 11.15 A.M. The atmosphere of this room contained 19.97 parts (nineteen and ninety-seven hundredths) of carbonic anhydride (carbonic acid gas) in 10,000 of air. There was some odor in this room, but less marked than in the former case. The normal proportion of carbonic anhydride in the atmosphere is 4 parts in 10,000, and the permissible impurity derived from respiration should not exceed 2 or 3 parts additional in a properly ventilated room. From this it appears that in the first case the air contained about five times, and in the second case about three times, the amount of impurity allowable for healthful respiration.

Very respectfully,

JAMES F. BABCOCK.

Here is the testimony of one of our most eminent chemists, giving this result of scientific experiments made under the fairest conditions for ascertaining the exact facts. Mr.

Babcock says that in the case of the Winthrop Avenue school building, room of Miss Adams, the odor on entering was strong and unpleasant, and produced a sensation of "closeness." In reference to the Beachmont school (Revere), he says, "There was some odor in this room, but less marked than in the former case;" and his summary of the results of his experiments is: "From this it appears that in the first case the air contained about five times, and in the second case about three times, the amount of impurity allowable for healthful respiration." Comment on such facts would seem to be needless.

Is there any doubt of the gross neglect of the authorities who permit such a condition of things a single day longer than would be required to apply the proper remedy? The statute has been criticised because it makes it necessary, under the foregoing ruling, for the inspector to show, not only that the means provided for ventilating the school-rooms are not up to the accepted standard, but that the air in them is so exhausted as to become injurious to health. And it has been said that it involves a better acquaintance with the principles of ventilation than those who are called upon to enforce this law can be said to possess. It may be said that, as it is a question of evidence whether or not proper ventilation is supplied in a given case, the testimony of scientific experts is always available to the government; and it would seem that there could be no practical difficulty in securing conviction upon such testimony, for example, as that of Professor Babcock, already cited.

What local authorities may think as to the wisdom of such a law, has nothing to do with the matter. There are other statutes that have become a dead letter because local authorities have seen fit to obstruct their enforcement. Soon after the decision in the Revere case alluded to, it was publicly spoken of as a matter of congratulation that the prosecution had failed. The reason given was, that if this regulation were enforced throughout the State, it would entail a vast expense, with no certainty that the object aimed at would be obtained. It was stated that failure has been the result of most if not all attempts which have heretofore been made at ventilation on a large scale; and the suggestion was made

that we could get a reasonable amount of fresh air in our school-houses by dividing them into more rooms, so that there would be fewer scholars in each; forgetting that the expense of such subdivision would be much greater than that of a proper system of ventilation, and absolutely barren of satisfactory results. Because the removal of admitted evils, so gross and malignant that it is difficult to discuss them with patience, will entail expense, they must be submitted to, or else dealt with as the inclination of local authorities may prompt.

Economy in municipal and town expenditures is always commendable, but it is not to be practised at the expense of public health and life. The school-houses ought to be "reasonably ventilated," concedes the critic who is disturbed because insufficient or negligent officials are compelled to obey a law intended to secure reasonable ventilation in such buildings; but he means some crude scheme, such as ventilating by occasional opening of windows, and taking the chances of satisfactory results therefrom. If it should be said that the evils complained of in relation to the sanitary condition of school-houses are visionary or exaggerated, a sufficient reply is to be found in the results of thorough investigation of the school-houses of the city of Boston, and the report of the Board of Health relative thereto. This report was submitted to the common council, and referred to the committee on schools and school-houses. A summary of this document presents facts which have arrested the attention of the citizens, and must eventuate in the adoption of measures to provide better sanitary conditions in the school-houses of Boston. One hundred and sixty-three school-houses were examined, with the following results: Defective drainage was found in 35, want of traps in 7, offensive privy vaults in 51, offensive urinals in 49, offensive and defective cesspools in 15, offensive water-closets in 6, defective drain conductors in 4. The ventilation of the buildings, the condition of the cellars and the surrounding air spaces, were especially examined, and call for special remark. Fifty-seven of the cellars were dark, musty or damp; 46 of the houses could properly be criticised as having too little yard room or air space surrounding them,

while some are closely hemmed in by high buildings or by objectionable trades. Of the 163 houses, 146 are without any modern or efficient means of ventilation, being dependent upon the old-fashioned shafts in the walls, aided here and there by small apertures through the external walls, all of which are too feeble to be called ventilation.

It would be much better if all privy accommodations were removed from the cellars to an adjoining apartment, where ventilation and such use of water or heat for the disposal of excreta could be used. As may be found most healthful and economical, by expert calculation, a dry and light cellar would be largely promoted by this step, and what is now a possible danger would be altogether avoided.

The question of yard room and the surroundings of the school-houses is an important one, and should be carefully considered in giving the necessary sunlight and fresh-air current about the building. The large number of pupils in each building, and the lack of means for extracting the foul air, have claimed the most attention and constitute the greatest sanitary evil connected with our schools.

In our recent examinations we find, by measurement, that the average number of cubic feet of space given to each pupil, in 163 houses examined, is as follows: —

	Cubic feet.
Reckoned by the number of seats,	202
Reckoned by the registered pupils,	235
Reckoned by the average attendance,	267

Ten of the best gave an average as follows: —

Reckoned by the number of seats,	407
Reckoned by the number of registered pupils,	504
Reckoned by the average attendance,	559

Ten of the poorest gave an average as follows: —

Reckoned by the number of seats,	90
Reckoned by the number of registered pupils,	99
Reckoned by the average attendance,	112

These measurements were made by twelve inspectors, and, while there may be slight errors in individual cases, they may be regarded as too small materially to effect the averages given.

In 1874 we caused to be made a chemical analysis of the atmos-

phere of every room in ten school-houses. The selection of the houses and the methods pursued were such as to give a fair average of the condition of the air in all of the school-houses of the city, without needlessly extending the expense. The result of this examination showed that in only one room of the 111 rooms examined was the impurity as low as 5.7 volumes of carbonic acid gas to 10,000 volumes of air, and from this it ranged as high as 30 volumes to the 10,000. The rooms of the best house averaged 3.3 volumes to 10,000, and those of the poorest one 18.1 volumes to 10,000. The majority of the school-houses remain unaltered. Having ascertained the actual condition of the air in the average school-room, are we not justified in saying that such an atmosphere is unwholesome, and produces mental and physical lassitude in the children?

According to the best information that we have on this subject, a person requires about 3,000 cubic feet of fresh air each hour in order to keep himself in a healthful condition, and preserve the purity of the air. In other words, a person uses about 3,000 cubic feet of air each hour, and when it is once so used it is not fit to breath again until it has been renewed. An excess of carbonic acid gas in the air is regarded by authorities as indicating an excess of other impurities, and has been adopted as a standard measure in testing the purity of the air. The normal atmosphere contains about 4 volumes of carbonic acid gas in each 10,000 volumes of air; and when the amount of carbonic acid gas exceeds 7 volumes in 10,000, the air becomes perceptibly vitiated, and cannot be regarded as suitable for respiration.

We have found, by measurement, that the average air space allotted to each pupil in the average school-room, with an average attendance, is 267 cubic feet, and when the seats are filled, 202 cubic feet. Now, if 3,000 cubic feet are needed for each pupil per hour, the amount given to start with will last from four to five minutes, and to be kept fresh must be changed from twelve to fifteen times each hour, which is impracticable. In the poorer houses, or those in which the smaller spaces are given, the change of air, by the same rule, would need to be made about thirty times per hour.

We have stated the amount of air supply found to be necessary for the best results. Two thousand cubic feet per hour would be a compromise, and not an unreasonable amount to ask for. Can this be done, and how?

The practicability of ventilating school-houses admits of no doubt. It is as much a matter of exact knowledge as any other question in mathematics or engineering. The air should be intro-

duced into the room at a proper temperature, well distributed to the children, and removed sufficiently often to prevent foulness and without producing uncomfortable draughts. This can be done only with the aid of power, and may be accomplished by heated shafts or fans. The air may be propelled into the room and escape by properly arranged outlets, or the foul air may be extracted from the room, having properly arranged inlets for the fresh air, preference being given to the latter method. All dependence upon natural ventilation should be abandoned as delusive and untrustworthy, and the simple question of expense, for the use of the necessary power to move the air, be recognized and met without further delay.

The Board of Health would respectfully recommend that His Honor the mayor be authorized to appoint a board of three sanitary experts, who shall consider and report to your honorable body, within six months from their appointment, the best method and specifications for ventilating our school-houses and disposing of the excreta therefrom; and that for such services the experts be paid a liberal compensation.

For the Board of Health,

S. H. Durgin, *Chairman.*

It seems to me that no apology is needed for devoting so much space in this report to the facts and arguments of the principal local health board in our State, relative to the exact condition of the school-houses of the city of Boston.

The practical question remains, What has been done in the chief city of Massachusetts? Following is a copy of a letter of the superintendent of public buildings of the city of Boston, dated Oct. 23, 1889: —

City of Boston, Office of Superintendent Public Buildings,
Oct. 23, 1889.

R. R. Wade, Esq., *Chief Massachusetts District Police.*

Dear Sir: — In reply to your letter of yesterday, requesting information as to the disposition of your notices relating to the means of ventilation of certain school-houses, and if any means had been taken to comply with the notices, would say that an estimate was made by me, in accordance with a request from His Honor the mayor, of the cost of providing ventilation for certain school-houses named in your letters of February 26, 27, 28, and March 5. The estimate was $20,000, and was submitted to the board of

aldermen March 11, and referred by them to the committee on finance, where it still remains. In order that you may more clearly understand the disposition of your notices, I enclose a clip from the official proceedings of the board of aldermen that relates thereto.

Yours respectfully,

JAMES C. TUCKER,
Superintendent Public Buildings.

The following was received: —

DEFECTIVE SCHOOL-HOUSES.

CITY OF BOSTON, EXECUTIVE DEPARTMENT,
March 11, 1889.

To the Honorable the City Council.

GENTLEMEN: — I transmit herewith sixteen communications on the sanitary condition of certain school-houses in this city, received from the inspection department of the Commonwealth. Under sect. 4, chap. 149, of the Acts of 1888, the Commonwealth expects all the defects complained of to be remedied by April 4. The superintendent of public buildings estimates the expense at $20,000. The law of the Commonwealth being imperative, the duty of providing $20,000 should be discharged without delay.

Respectfully,

THOMAS N. HART, *Mayor.*

CITY OF BOSTON, OFFICE OF SUPT. OF PUBLIC BUILDINGS,
March 11, 1889.

Hon. THOMAS N. HART, *Mayor.*

DEAR SIR: — In reply to your request, I have caused estimates to be made of the cost of providing ventilating apparatus for the sixteen school buildings complained of as being deficient in that regard by the chief of the State police, and find that the total expense will require an appropriation of $20,000. This includes all the galvanized iron work in connection with the work.

Yours respectfully,

JAMES C. TUCKER,
Superintendent Public Buildings.

Following are the school-houses reported on, with the requirements: —

Lyman, Decatur Street, East Boston, — sanitary provisions.

Austin, Paris Street, East Boston, — fresh air, ventilation, sanitaries.

Adams, Sumner Street, East Boston, — fresh air, ventilation, sanitaries.

Chapman, Eutaw Street, East Boston, — fresh air, ventilation.

Webb, Porter Street, East Boston, — fresh air, ventilation, sanitaries.

Webster Street, East Boston, — same as above.

Grant school-house on Phillips Street, — fresh air, ventilation.

Winchell, Blossom Street, — air chamber for each fan in operation.

Emerson, Poplar Street, — fresh air, ventilation.

Freeman, Chester Street, — fresh air, ventilation.

Sharp, Anderson Street, — same as above.

Bowdoin, Myrtle Street, — same as above.

Baldwin, Chardon Street, — same as above; new sanitaries.

Ingraham, Sheafe Street, — fresh air, ventilation.

Wells, Blossom Street, — fresh air, ventilation.

Phillips, Phillips Street, — same as above.

Referred to committee on finance.

This correspondence will illustrate somewhat the procedure involved in the efforts of the inspection department to enforce the law in relation to the sanitary condition of our school-houses. After due diligence has been used in making thorough investigations, and notices served upon the proper authorities of the existence of defects in ventilation, etc., which must be under the law speedily removed, the machinery of local legislation and local executive action must be set in motion; and the delays which in almost every case are sure to follow, seem to the public at large to indicate indifference to the situation.

The pigeon-holes of committees and of similar authorities contain many matters of more or less pressing importance, and it is not strange if in some instances subjects of vital importance are allowed to slumber too long in such places. The finance committee regard the subject simply in the light of one of many appropriations, for which it must somehow provide the means. Its sense of responsibility for the wretched condition of the school-houses of the city is modified by its knowledge that no provision was made, in the annual appropriation for the department of schools and school-houses, for such an emergency, and that it is not easy to choose among the many calls for special appropriations.

Yet the facts are such as to justify immediate action upon the part of the municipal authorities. For several months inspectors detailed for the purpose examined the school-houses of Boston, and they have made full reports of what they found to be their actual condition. There are 176 school-houses in the city of Boston, and, of the number visited by the inspectors, but a very small number were found what they should be in respect to ventilation. The worst condition of affairs is found in the West End, North End, South Boston, East Boston and Charlestown districts. In one school-house visited the sanitary arrangements were so bad that several of the teachers were made ill. During the warm weather of the last days of the spring term it was nece sary to close the windows, and keep them shut during the session of the school. To the evil of over-crowding was added that of the foulest stenches, which came from without. The worst school-houses are those generally in the poorer sections of the city. While Boston, the largest and wealthiest city of New England, with its emporiums of commerce, trade and manufactures, is moving so slowly in this matter so vital to the comfort and health of its children, the smaller cities of the Commonwealth are putting their school-houses into the best possible sanitary condition. This is especially true of Worcester, Lowell, Malden and Newton. In many of the larger towns the law is being faithfully complied with. In North Adams there was a school building which was far below the standard of ventilation, and the town appropriated $10,000 to secure better sanitary results. In the town of Brookline was a similar case. The inspector found school buildings which needed attention; he sent his report to the proper authorities, and an appropriation of $5,500 was promptly made.

I had hoped that the examinations made by the inspectors in the early part of the year in the city of Boston would have borne fruit long ago. It seemed to me very desirable that the necessary work should be done during the summer vacation of the schools. His Honor the mayor acted promptly upon receipt of notices from this department, and brought the matter to the attention of the city council. An appropriation of $20,000 was asked for, which amount for

such an object does not appear to be excessive, and ought not to be deemed oppressive to the authorities of a great and opulent city; and the only direct answer to the demand that the city of Boston shall comply with the law of the Commonwealth concerning the proper sanitary provisions and proper ventilation of its school-houses and public buildings, — and it is a semi-official answer, too, — is, "We have not got it to appropriate." This was the sole reason four months ago; the same reason stands in the way now. So the schools must wait. I may be pardoned if in this connection I cite the statement of a prominent official of the State Board of Education, whose opportunities of observation and knowledge on the subject are among the best.

I have always believed that the State inspectors should be men of recent knowledge in every appliance of ventilation. They ought to be competent to discover defects and remedy the evils. They should never hesitate a moment to order such changes as will be effective. I said over a year ago that I believed that the State inspectors were thoroughly competent to perform their duties. I have had no occasion since to change my views. I have a most favorable opinion of their work, and am confident that they have done their duty. It is agitation that brings about great reforms. The State inspectors have been carrying out these reforms with creditable energy, and, by constantly recommending improvements, have been enabled to bring about a condition of things that has never existed before. The State inspectors ought to be assisted by "sanitary experts."

The history of the Legislature in Massachusetts concerning the so-called industrial population taken as a whole, from the period when the ten-hour law was enacted to that of the latest statutes relating to sanitary provisions, shows that no theory or scheme of alleged improvement has secured the attention of the Legislature until a solid basis of facts was presented for its consideration. It has always seemed reasonable that, since a large portion of the time of young children is spent in the school-room, the proper conditions for health and comfort should be secured, at any cost. The rooms should be large enough to prevent over-crowding; they should be kept clean, properly heated, supplied with

an abundance of sunlight and pure air, cheerful in all their appointments, and absolutely free from contamination of every sort. If the air of a school-room is loaded with foul odors, and so poisonous that its effects are visible in the sickly and languid faces of the scholars, they might as well be at once dismissed into the open air, and the attempt to educate be abandoned until the conditions are radically changed. *Impure air, defective drainage, over-crowding, and like evils, not only undermine health and impair vigor, but are serious impediments to the work of teaching.* The most common impression upon this matter of ventilation is that the adoption of any effective system necessarily involves enormous expense, and that there is no alternative but to employ some complicated and costly method, or to rely upon the antiquated and senseless custom of reducing temperature and furnishing fresh air by flinging open windows and doors.

In a recent report of our State Board of Health a system of heating and ventilation is described, and in fact is now in use in some school-houses, which gives complete relief. It is simply a system of "jacketed stoves." A full description of this system is given later on in this report.

In making investigations the inspectors have not proceeded upon first impressions, nor wholly upon statements of others; although all information from proper sources has been welcomed. Reference to their respective reports to me will show that only a small proportion of the school-houses in the Commonwealth are in the best condition. The greater number need improvement of some kind, such as in the matter of heating and ventilation, and in sanitary appliances, and their maintenance at a proper standard; while some were found in a bad condition, from insufficient ventilation, defective drainage, and the presence of foul odors from urinals, privies and cesspools.

The inspectors have not only obtained knowledge of facts as to the actual condition of the school-houses, but have sought with much care information from the best authorities accessible to them. Expert testimony substantially agrees as to the elements of danger which may be usually expected under given conditions. Analyses of air, properly made,

show with accuracy the proportion of vitiated elements therein; and, while it cannot rationally be expected that the sanitary conditions of public buildings and school-houses should be always up to the highest standard of purity, it is the duty of this department to insist that the law shall be strictly complied with by all whom it embraces.

As an example of the indifference and opposition sometimes encountered, let me cite an instance of official obstruction which occurred during the current year. In a certain school-house the air was found to be so bad that I requested an inspector to make an investigation. The building was in a foul condition, and the teachers complained of the effect upon their health. The proper authorities were notified, but they, after visiting the building, decided that there was no fault to be found with the ventilation. There could not be any possible doubt about the facts in the minds of disinterested persons, were they restrained from admitting the existence of the evils complained of, by false notions of local pride, considerations of economy, ignorance or perversity.

In another case the teacher in a certain school in the vicinity of Boston said she did not dare to open the windows of her school-house, on account of the terrible odors arising from the privies adjacent. Inquiry established the fact that the vaults of those out-houses had not been emptied for some two or three years. Instances of this kind could be multiplied; but it is sufficient to say that the records of this department contain abundant evidence of the imperative *necessity of sanitary supervision of the school-houses of Massachusetts.*

As to the requirements of sanitary science for the suppression of evils arising from imperfect ventilation, there is some difference of opinion as to the degree of impurity of air that would be absolutely detrimental to health; but there is a substantial agreement upon the essential matters involved. It is settled that the purity or impurity of atmospheric air is determined by the proportion of carbonic acid gas found present therein. If it contains not more than four parts in ten thousand, it is universally conceded to be pure. Carbonic acid gas is produced by the processes

of respiration, fermentation and decay. Its presence is always an indication of decomposing organic matter. Air expired from the lungs contains about four per cent. of carbonic acid. Imagine sixty children crowded into the average-sized school-room, many of them careless about the cleanliness of their person, whose exhalations are of an offensive character, every hour the air being loaded more and more with impurities, which are being constantly taken up into the lungs and breathed over and over again; and, if such an atmosphere is not debilitating, infectious and poisonous to the human system, then all the teachings of experience are misleading, and all the evidence of the senses must be discarded. Eminent medical authority asserts that when the air of a room has a perceptible musty, unpleasant odor to a person entering it from without, the air is unfit for the lungs, and will sooner or later produce disease.

In a lecture delivered before the teachers of public schools by Prof. F. W. Draper, he said: —

The ordinary conditions of the unrenewed air of a school-room are quite enough to astonish us, if we stop a moment to think of them. For there are not only the inevitably vitiating effects produced by respiration and the constant activity of the skin in persons who are healthy and cleanly, but the additional exhalations proceeding from unclean bodies, from ill-odored mouths, from decaying teeth, from dirty clothing, too frequently accompanying the city school-boy or school-girl to the crowded room which is the scene of their daily tasks.

The effects of breathing and re-breathing an atmosphere thus charged with harmful matters are not far to seek. Every one of us must have experienced at some time or other the noxious influence of an air thus vitiated. We all remember the unpleasant closeness, the headache, languor, and sometimes nausea, resulting. We are told of the poisonous effects, in the form of fever, coming from the larger doses of this irrespirable air. There is another important thought in this connection. Besides these direct effects of inhaling a foul atmosphere, an indirect and not less significant consequence is recognized. Disease may be powerless in its assaults on the perfectly healthy human system, while it may find lodgement in a body which bad air, by lowering the tone and depressing the vital vigor, has made an easy victim of epidemic influence. Many a case of sickness proves fatal on account of

an unperceived prostration of the sufferer's strength by continuous exposure to an atmosphere impure from exhalations from the body; and many children yield easily to contagious disease through the devitalizing effects of breathing an unwholesome school-room air.

In relation to the fresh-air supply and foul-air removal, we have found in our researches quite a difference of opinion among eminent authorities regarding the amount necessary to secure sufficient ventilation. Among the accepted authorities, Dr. John S. Billings ranks among the highest. He advises that "heating surfaces," foul and fresh air flues and registers, be provided for an air supply of one cubic foot per second per person, for rooms which are to be occupied constantly. When the room is to be occupied but three or four hours at a time, and is thoroughly aired in the interval, the amount may be reduced to three-quarters of a foot per second, or twenty-five hundred feet per hour. This, for instance, is a proper allowance for such rooms as halls of assembly, theatres, etc.

I certainly do not believe that thirty cubic feet of air per minute in rooms constantly occupied will secure good ventilation. Under such circumstances the air will become markedly foul, and will exercise a very deleterious influence upon the health of the occupants, who will be especially liable to consumption and allied diseases, if they continue to remain in it for any great length of time; and will suffer from headache, loss of appetite, want of energy, etc., from even a comparatively short exposure to such vitiated atmosphere as this will produce. Other authorities fix the amount at about twenty-five hundred cubic feet per hour per person. An allowance of three thousand cubic feet per hour per person is given by Dr. Parks, and this seems to have been accepted by modern sanitarians. Mr. Robert Briggs, C. E., in his paper on the ventilation of halls of audience, read before the American Society of Civil Engineers, says:—

It seems pretty well established, for rooms continuously occupied by persons either in good health or at least not subject to offensive diseases, that thirty cubic feet of air per person per minute, if of proper temperature and humidity, if adequately intro-

duced and removed into and from rooms which have a cubical capacity of not less than one thousand cubic feet per person, will healthfully and satisfactorily ventilate such rooms.

These requirements, it will be observed, are less than those insisted upon by other authorities. The Board of Health of the city of Boston, in their report for the year 1887, say, in relation to the public schools: —

There ought to be such space for each pupil and such frequent changes of air as will keep the room free from perceptible odor, without producing uncomfortable draughts of air. To do this, you must give each pupil about three thousand cubic feet of fresh air hourly.

We believe ourselves to be justified in assuming that the conclusions of these authorities are a safe basis of action in the enforcement of the laws relating to these matters. It may be inferred that all sorts of schemes and appliances for ventilation have been brought to the notice of the inspection department, with the view of securing its official endorsement. This we have no authority nor desire to give. We are concerned only to see that adequate results are produced, and that by any proper means the requirements of the law are met. We have no argument with those who, despite the lessons of experience, insist that open doors and windows afford sufficient ventilation. We believe that the most essential provision for successful heating and ventilation consists in some active, continuous motive power, always under control, by which a current of air is maintained in occupied space. Mr. Robert Briggs says: —

It will not be attempted at this time to argue fully the advantage of the method of supplying air for ventilation by impulse through mechanical means, — the superiority of forced ventilation, as it is called. If air is wanted in any particular place at any particular time, it must be put there, — not allowed to go there. Other methods will give results at certain times or seasons, or under certain conditions. No other method than that of impelling air by direct means with a fan, is equally independent of accidental natural conditions, equally efficient for a desired result, or equally controllable, to suit the demands of those who are ventilated.

Professor Woodbridge says: —

The considerations favorable to ventilation by fan are: The ready control of pressure differences, a reduction of flue area to the limit of requirements imposed, the economy of method of using heat for motive purposes, steam use, skilful firemen assured, and, in general, a reduction in the heating surface required for giving the air moved a desired increased temperature. Among the mechanical devices for the movement of air through channels, none are so economical of power and convenience in use for general ventilating purposes as the fan.

Mr. Briggs also says: —

In all mechanical appliances, that is the simplest which most positively and directly effects the purpose in view; and, in this matter of supplying, it may be claimed that the process of impelling it when and where wanted is at once the most certain and efficient, and that the fan is the simplest and readiest machine for doing it.

As I have stated in a previous part of this report, heating and ventilation are in a certain sense inseparable. In regard to heating, indirect radiation should be had in all cases where it is practicable, with ample inlets for fresh air, so that the discharge of heated air should be from six to eight feet above the floor level, and with ample and efficient means of carrying off the foul air at or near the level of the floor. This, in my opinion, is the best method to be adopted. I have tested the air in school-rooms where stoves were employed, and found it better than in similar rooms heated by steam or even furnace heat. But I regard it as settled, in the language of Dr. J. G. Pinkham of the Lynn Board of Health, "that it is impossible to supply school-houses with the large amount of fresh air required for proper ventilation, and at the same time to keep up the temperature, unless provision is made for warming the air before and during its introduction." There is one thing about this whole subject which is very gratifying; and that is, the general enlightenment which proceeds from the spread of knowledge of sanitary and hygienic matters. No community will long remain satisfied with unsanitary conditions in its school-houses, after it learns that the Legislature has provided the

means of correction for such evils, and considerations of expense will not be allowed to defeat the comfort and health of the many thousands of school children who are under the fostering care of the Commonwealth during the entire period of school age.

A Beneficial Law.

No more humane legislation in the interest of those especially affected by it has been placed upon our statutes than chapter 149 of the Acts of 1888, the enforcement of whose provisions is a part of the duty of the inspectors of this force. And it is gratifying to be able to state that I am constantly obtaining evidence of the good work we have entered upon. We have made many improvements in this matter of ventilation of our school-rooms throughout the State; and I am confident we shall, when the facts are known, receive the earnest support of all interested in the comfort and health of the children and teachers in our public and private schools. The following-named school buildings have been visited by the inspectors, and their recommendations and suggestions have been followed, with results which show the wisdom in the enactment of the law: —

Inspector Brown reports: —

In enforcing the provisions of chapter 149 of the Acts of 1888, "An Act to cause Proper Sanitary Provisions and Proper Ventilation in Public Buildings and School-houses," I have not in all cases met with that support and encouragement that might have been expected. The officials of the city of Chelsea, however, have from the first been most favorably disposed in regard to a proper ventilation of their school-rooms, and their aim has been to provide the very best system known; and, though some yet remain to be ventilated, as a high official remarked, "They are on the slate." The work already done is being closely noted, so that, if any faults are discovered, they may be corrected in the buildings yet to be ventilated. It is only a brief matter of time when all the school buildings of Chelsea will, in regard to all that concerns the health and welfare of the school children, stand second to none in the Commonwealth.

The town of Winthrop also has not been backward; the orders given have been well received, and due attention paid to them.

The addition to the Pauline Street school makes this building an ornament to the town, and the ventilation has been well looked after. The committee in charge may well feel satisfied with their labor.

As a result of the efforts of this department in behalf of better ventilation, there is, in my opinion, an awakened interest, and a growing appreciation of the benefits to be derived from it. Where I was formerly met with some such reply as, "The ventilation is as good now as it ever was," the question now is, "What can be done to make it better?" And, in a town where nothing has been done to improve the school-houses, an official who had been quite backward in favoring any changes a few days since met me with this salutation: "Well, I am about ready to kick. My boy comes home from school sick about twice each week, all owing to the poor ventilation. It is time something was being done about it."

I think the day is not far distant when the subject of proper ventilation of school buildings will receive that consideration which the welfare of the children so greatly demands.

Shurtleff School, Chelsea. — This school, formerly known as the Hawthorn school, has been remodelled, a story added, and now contains sixteen school-rooms and a hall in the third story. The Smead system of heating, ventilating, and sanitary arrangements, have been provided, and at the time of inspection each pupil received twenty cubic feet of air each minute; in colder weather, with good fires burning, the results would doubtless be materially increased.

Carter School, Chelsea. — Is a four-story brick building, containing fourteen school-rooms, and a large hall in the fourth story. The change that has been effected in the ventilation of this building well deserves more than passing notice. My last report stated that each pupil received but $2\frac{1}{2}$ cubic feet of fresh air per minute. Since that time the Fuller & Warren system of ventilation has been provided, and at the time of my last inspection I found that on the fourth floor each pupil received $40\frac{1}{4}$ cubic feet of fresh air each minute; the third floor, $39\frac{1}{2}$; the second floor, $24\frac{1}{4}$; and the first floor, $36\frac{2}{3}$ cubic feet to each pupil per minute, or an average through the whole school of above 34 cubic feet to each pupil per minute. It will be noticed that the second floor gives a less amount of fresh air than the other floors; this is partly owing to the outlets to the foul-air flues on this floor being considerably smaller than the capacity of the flue, and smaller than those of

the other floors. Attention has been called to this fault, and a promise obtained that the registers on this floor will be speedily enlarged, which will give a much better result than is here shown. Another fact in connection with this building is, that the superintendent of schools, in his report for 1886, in enumerating the number of school-rooms, says, "One room in the Carter building is not included, because regarded as *unsuitable for occupancy by school children.*" In this room each pupil now receives 32 cubic feet of fresh air per minute, and I found but $7\frac{4}{10}$ parts of carbonic acid in 10,000, — a result not yet obtained in any other building that I have so far inspected.

Broadway School, Chelsea. — This is a two-story wooden building of four rooms, formerly heated by direct steam pipes, running about the sides of the rooms, and with *no provision for fresh-air supply.* Since my order for better ventilation, each room has been provided with indirect steam, with a fresh-air opening 18 by 30 inches covered by a fine wire netting, and a sheet-iron duct of the same size leading to a sheet-iron box 4 feet square, containing 100 feet of radiating surface, and thence to the school-rooms through a cast-iron grating 20 by 28 inches, and at the height of some 8 feet from the floor. Each room also has a foul-air flue 18 by 30 inches, with an outlet covered by a cast-iron grating 19 by 25 inches. These flues unite in the attic in an air chamber heated by steam coils, and connecting with a ventilator in the roof. The steam pipes around the sides of the rooms are so arranged that if in extreme cold weather any extra heat is needed, the steam can at once be turned on to them. Each pupil *now receives 25 cubic feet of fresh air each minute*, which amount can be materially increased by removing the gratings from the fresh-air openings, or by enlarging them to the full capacity of the fresh-air duct.

Inspector Coon reports: —

Sir: —I herewith submit a report of the work accomplished in my district in the ventilation of school buildings. Early in the year official notices were sent to the city and town authorities of my district, directing that certain changes be made in several of their school buildings, that they might conform to the requirements of the law. With one exception — viz., Boston — they promptly responded to the demands of the government, and have made extensive improvements in many of their public buildings. The town of Brookline has recently erected several substantial brick school buildings, which are a credit to the town, models of

convenience, and very attractive for teacher and pupil. In the line of sanitary improvements the committee have removed from several buildings the old-style offensive sluice vaults, located in the basement, and substituted therefor water-closets of the most approved design, located in a brick addition to the building, leading from the basement, heated by steam, and properly ventilated. The school committee of Brookline in their last report stated that twenty-five hundred dollars was appropriated to improve the sanitary condition of the Pierce grammar school-house; the water-closets removed from the basement, a brick addition constructed, and completely furnished with closets of approved design, heated by steam, and the work done in a complete and thorough manner. Similar improvements were made in the Pierce primary school-house. They reported that the Lawrence and Boylston primary school-houses were in a very unsatisfactory sanitary condition; that they had attracted the attention of the State supervisor, who had notified the committee that their system should be improved; in which the committee fully concurred, and asked for an appropriation of $5,500, which was granted, and the changes made in a satisfactory manner.

During the past year a new and complete system of ventilation has been placed in the Brookline town hall, at a cost of $3,900, and electricity provided for lighting. In the main audience room eight inlet ducts are provided for the admission of fresh warm air: six have a register face 20 by 28 inches square, two have a register face 16 by 27 inches square. For the dismission of foul air there are nine ducts provided: four at the base or floor line, with a register face 19 by 25 inches square; two in the gallery in the rear of the hall, each with a register face 20 by 28 inches square; three in the ceiling, 5 feet 4 inches in diameter, each connecting with the air chamber by a thirty-inch flue, with a damper in the flue above the register. The area of the hall is 288,020 cubic feet, with a seating capacity of 1,000 persons. The metal ducts from the hall, with those from other sections of the building, are connected with a large chamber in the attic, 11 feet 5 inches long, 10 feet wide, and 5 feet deep, through which the air is exhausted from the hall by means of a fan, 6 feet in diameter, of the A. Hun Berry pattern. This is operated by an electric motor, belted to an Evans friction-cone pulley, regulated at the present time to run the fan 250 revolutions per minute; and it can be so adjusted as to operate the fan at any speed desired to within a reasonable number. All the machinery, together with the fan and air chamber, is suspended from the roof trusses, padded with rubber, to deaden the sound caused by the running of the motor and fan.

ATTIC, BROOKLINE TOWN HALL.

From the base of the hall there is carried away 8,000 cubic feet of air per minute, or changing the atmosphere in the room about once in thirty minutes. This without the use of the ventilators in the ceiling; should it become necessary to remove the air quicker, then these additional openings can be brought into use, and, with a velocity of 600 feet per minute, the fan will remove 17,000 cubic feet of air per minute. There is no reason why any person should complain of poor ventilation in this building, provided both heating and exhausting ducts are in use.

The school authorities of the town of Watertown have felt well disposed toward the new law, and have done much during the past season toward improving the ventilation of five of their largest buildings, in which heretofore no ventilation had been provided in any way operative in its character. With these added improvements, the janitors have shown much interest in keeping their buildings as well ventilated as possible. Among the buildings improved are the following: —

Phillips School-house. — This is a six-room building, two stories in height. The lower floor is used for primary schools, the second as a high school. There never were any proper means of ventilation, previous to the enactment of the present law; but during the past season the school committee have put in a system which is effective in its operation. In the attic of the building is constructed a large metal air chamber, amply supplied with steam radiating pipes, from which eight ducts, 16 inches in diameter, and two smaller ducts, run to the school-rooms and corridors of the building. The lower story, the large room in which has a seating capacity of seventy pupils, is heated by indirect steam radiation. The fresh warm air enters the room through three ducts, and gives an air supply of about 25 cubic feet per pupil per minute. No window except the transoms over the doors was opened, consequently no cold currents experienced by the pupils. The means provided to remove the vitiated air therefrom consist of two metal ducts, 16 inches in diameter, equal to an area of 402 square inches. An open fireplace is also provided. The volume of air passing from this room through these ducts was 1,480 cubic feet, at a velocity of 530 feet per minute. The two smaller rooms on the lower floor are each supplied with two fresh-air inlet ducts and one outlet. The corridor, used also as a wardrobe, is ventilated through a metal duct 16 inches in diameter. The entire upper floor, wherein about ninety pupils congregate, has an average air space of 661 cubic feet to each pupil. This includes the main school-room, two recitation rooms, and experimenting rooms.

Metal ducts connect these rooms with the air chamber, and remove therefrom 26 cubic feet of air per minute per pupil.

The large room has four fresh-air ducts; the recitation rooms two each. The sanitaries are located quite a distance from the school-house, but connected with the building by an underground tunnel, so there are no foul odors arising from the basement or entering the rooms from outside. The ventilation of school-houses through metal ducts, — "wooden ducts being forbidden by law," — with a heated air chamber in the attic of the building, seemed to me the best adapted for houses of this kind, and I therefore recommended its adoption. The work was performed by the Walker & Pratt Manufacturing Company, in a very thorough and workmanlike manner. They have done the work in twelve school-houses in my district. With buildings similar in construction and those three stories in height, with French roof, finished in third story for school purposes, one cannot do as he would like in designing a system of ventilation, and must therefore do the next best thing to accomplish as much as possible. But in all cases where practicable I would have the outlet duct at least 23½ inches in diameter for each school-room of fifty pupils.

The Spring, Francis and Parker School-houses. — All have been fitted with a ventilating system during the past season, similar to that of the Phillips, before mentioned, and as effectual in its operation.

Coolidge School-house. — This is also similarly provided, but as yet is not fitted with any heating pipes in the air chamber. Changes in the heating system of the building are anticipated; consequently, the ventilation is not as effectual in its operation as it will be later, when heat is applied, but is much improved over its former condition.

The school authorities of the city of Newton are having their buildings put and kept in good sanitary condition. Seven school-houses have been provided with a system of ventilation during the past season, at an expense of about $7,000. The basement walls of all the buildings under their charge in the city have received two coats of lime wash, as a sanitary improvement. I have had no friction whatever with the city authorities, upon any matter pertaining to the building and sanitary laws; while the utmost harmony has prevailed, and together we have worked for the best interest of the pupils, and to make the buildings safe and healthy in every particular.

The city of Newton is now erecting at Auburndale a two and one-half story, six-room brick school-house, which is excellent in design, with ample flues for heating and ventilating the building, and is designed to be a model structure for school purposes; the plans of which have been deposited at this office, and duly approved. This will make twenty-one school-houses in the city. I think it will be of interest to describe somewhat the means to be employed in heating and ventilating this building, in order to meet with the requirements of the law, and to show that the era of small ten and twelve inch fresh-air ducts for heating school-rooms is past.

In this building two brick foul-air ducts or shafts are to be constructed, each 6 feet 10 inches long, by 3 feet wide, inside measurement; a part of which is to be used as a smoke-stack for the furnace, but leaving an area of 15 square feet in each flue, to remove the foul air from the rooms. Each room is to have a separate duct of galvanized iron, 27 inches square, leading to the basement, and these connect with the main ventilating brick shaft; the foul air to be taken from the floor level of the room, and the brick shaft to be heated when the schools are in session. The fresh warm-air inlet ducts to the school-room are to be of brick, with an area of 640 square inches for the lower rooms, and 560 for the upper, designed to let in a large volume of air at a low temperature. The opening from these ducts to the rooms are to be about eight feet above the floor and upon the same side of the room as the outlet. The ten and twelve inch round air ducts in such common use at the present time, with an area of 78 and 113 square inches respectively, permit the air to enter the room at an extremely high temperature, at a rapid velocity, and an insufficient quantity. Much care has been exercised to make the building safe, convenient for teacher and pupil, and provided with the best sanitary appliances. Two staircases, one at each end of the building, extend from the basement to the third floor, which is designed to be finished for a hall for school purposes at some time in the future. The staircases at their commencement in the basement are entirely encased by a brick partition; and the heating apparatus, located in the centre of the basement, is surrounded by a brick wall, and the ceiling made fire-proof. The corridors of the building are 14 feet wide in the narrowest part, and the rooms are designed to accommodate forty-eight pupils each, it being the rule of the school committee to permit no more to occupy one room.

Among the old buildings improved in the matter of ventilation are the following: —

Mason School-house. — This is a large, three-story, eight-room building, with a large hall in the third story. It is heated by steam, both direct and indirect; and for the north side additional heat is received from two furnaces. Each room has two fresh-air inlets, with registers 19 by 12 inches square; also one direct stack. The rooms on the north side have also the furnace heat, as above mentioned, for use when the weather is extremely cold. The large corridors, 10 feet wide, run the entire length of the building, and are supplied with direct and indirect stacks of pipe. Previous to this year, no ventilation was provided which was worthy of the name; but during the past season extensive improvements have been made. In the attic there have been constructed two large hot-air chambers, one 10 feet long, 5 feet 8 inches wide, and 4 feet 6 inches high, containing 93 square feet of radiating surface, for heating the chamber; and from which runs a ventilator through the roof, 48 inches in diameter. The other is 13 feet long, 5 feet 8 inches wide, and 4 feet 6 inches high, and contains 114 square feet of radiating surface, with a 52-inch ventilator running through the roof. In the ventilator directly over the stack is a weighted damper, which may be closed after the session of the schools, that the heat may be retained in the building. From these heated chambers run eight 18-inch galvanized iron pipes, one to the base of each school-room, "with top and bottom ventilation;" sixteen 8-inch pipes to each wardrobe; four 16-inch pipes to the hall, "with top and bottom ventilation;" ten 14-inch pipes to the lower corridor; all equal to an area of nearly 22 square feet. With the temperature within 70 degrees, and outside 44 degrees, the amount of air passing out from the building through the two ventilators, from the first and second floor, at a velocity of 500 feet per minute, was 13,652 cubic feet per minute. Allowing for 360 pupils in the building, for which it has a capacity, it would give an air movement of 38 cubic feet per minute per pupil, including the ventilation from the corridor and wardrobes. With the present number of pupils there is an average of about 28 cubic feet of air per pupil per minute passing from the school-rooms, and 18 additional from the wardrobes and corridors, through the ventilating shaft. The line of water-closets in the basement have been provided with additional ventilating ducts.

Davis and Franklin School-houses, West Newton. — Both these are two-story, four-room wooden buildings, heated by furnaces. Ventilating pipes have recently been placed in these buildings, and constructed after the same manner as those in the Mason building, with foul-air ducts 18 inches in diameter, from the

school-rooms, and 9-inch pipes from the wardrobes, entering a galvanized iron air chamber in the attic, 7 feet long, 3 feet 4 inches wide, and 4 feet high, with a 30-inch ventilator, running through the roof. There are ten of these in each building, each containing hot-water pipes equal to 40 square feet of radiating surface, with the hot-water apparatus located in the basement. With a constant fire in the heater, a velocity of 500 feet per minute is obtained through the ventilating ducts. Additional ventilation and improvements have been made to the sanitaries in the rear of the buildings.

Hamilton School-house, Lower Falls. — A four-room school and small hall on third floor have been provided with the same arrangements as at the Davis and Franklin buildings.

Prospect Primary, Upper Falls. — A four-room wooden building, heated by furnaces. Ventilation has been provided in a similar manner as those before mentioned, but the rooms have each been provided with two 14-inch ventilating ducts, running to the attic and there connecting with heated chambers, as before mentioned, all of galvanized iron.

Prospect Grammar School-house, Upper Falls. — This is a three-story wooden building, two rooms on first and second floors and hall in the third story, heated by furnaces. The smallest number of pupils in one room is 35, with an air space of 436 cubic feet per pupil. The largest number is 48, with 318 cubic feet per pupil. The building is ventilated as follows: in the attic is constructed, of galvanized iron, two large chambers, each 9 feet long, 3 feet 6 inches wide, and 4 feet high, each having a 36-inch ventilator. The chamber is heated by hot-water pipes, with the heating apparatus in the basement. Each room has two 14-inch connecting ventilating metal ducts. The lower corridor also has one 14-inch ventilating duct, and from the hall on the third floor two 18-inch ventilating ducts.

Jackson School-house, Nonantum. — This has been similarly provided with the ventilating system described in the several buildings before mentioned.

In addition to the school-houses mentioned in this report, I herewith describe the system of mechanical ventilation adopted in one of the churches in this city since the law took effect.

Eliot Church, Newton. — This building, recently constructed, is one of the finest structures of its kind in the State. The intro-

duction of fresh air is amply provided for, and means are provided to remove the vitiated air therefrom. The cubical contents of the large audience room are 502,250 feet. The vestibule and side room have an area of 26,531 cubic feet in addition. The introduction of fresh air is very uniform in its character. The entire structure is heated with two of Mills' patent water-heating sectional boilers, each equal to 39 horse-power. Under the main audience room are six large air chambers, in which are stacks of Golds pin radiators, equal to 2,400 feet of surface for heating air that enters the church; not including the vestry, which is provided in a similar manner with hot-air chambers. For these chambers, above described, are sixteen openings through the floor to the main audience room, with registers 14 by 18 inches. In addition to the indirect heat there are 2,600 square feet of surface in vertical radiators, arranged under the windows and near the several entrances, to counteract the cold currents coming from that direction. The vitiated air is removed from the room through eight registers in the floor, 10½ by 36 inches, and two 30 by 30 inches. These openings are connected under the floor, by graduated metal pipes of galvanized iron, to two 42-inch pipes; and through these pipes the air is exhausted from the church by the use of a Mills' fan, to which the 42-inch pipes are connected. The fan is operated in the basement by a Tuerk water motor, with a pressure of 80 pounds to the square inch. Using but 2 cubic feet of water, it removes 10,000 cubic feet of air per minute. From the fan the air is forced through two perpendicular shafts, each having an area of 17 square feet; these intersect in the attic, forming a single flue, and thus passing out through the roof. In the ceiling over the gas chandelier are 10 open registers, 5 feet in diameter. All the air vitiated by the burning of the gas passes into the attic; thence, at a rapid velocity, out of the attic chamber through an opening into the large central flue. The fan is hindered in its operation, on account of working against a pressure. For some unknown reason the connecting flue of brick between the fan and main shaft is so contracted in its construction as to give the opening an area of but 13 square feet, while the fan is exhausting from 19 feet of opening, and moving but 600,000 cubic feet of air per hour; when its capacity, with 80 revolutions per minute, is 900,000, but for this error.

Inspector MERRIAM reports: —

MY DEAR SIR: — I have the honor to report the success of the various laws which have been entrusted to me to enforce. Chapter 426, 1888, "An Act in Relation to Ways of Egress and Means

of Escape from Fire in Certain Buildings," has been well received, considering the amount of work I have found to do in certain localities; and it is gratifying to see how readily my orders have been complied with.

As to chapter 316, 1888, "An Act to regulate the Erection and Construction of Certain Buildings," my work has been limited, compared to that in other districts; although the plans and specifications required have been promptly submitted, and all recommendations directed have been observed; and it is the universal opinion that the advantages of such a law are many. It protects life and property, saves much future expense, and encourages better construction.

My duties under chapter 399, 1888, "An Act providing for the Inspection in Certain Cases of Buildings and Other Structures alleged to be Unsafe or Dangerous," have been confined to one case, which was promptly investigated, reported upon, and satisfactorily received.

Chapter 149, 1888, "An Act to cause Proper Sanitary Provisions and Proper Ventilation in Public Buildings and Schoolhouses," was indeed a progressive step. The sanitary provisions in such buildings in my district are but few that could be termed good, while a very large majority should be classed as bad; especially in school buildings, many of which have inferior water-closets and urinals, placed in corridors and basements without exterior connections or ventilation of any kind, and poorly cared for. As to proper ventilation of school-rooms, with but three exceptions, in the entire district, very little attention had been given to the subject prior to the passage of this act. In most cases they were close rooms, heated by stoves, direct steam or furnaces, and in some cases small flues carried up in walls or partitions, connecting with rooms in the several stories, but without any means for inducing air to enter them. As to the supply of fresh air, far less attention had been given than to the exhaust, further than the limited amount furnished by the common furnaces in such buildings as are heated by them. I have given much attention to the enforcement of this act, and am highly pleased with the manner in which several towns have taken hold of it, and the good result obtained, as will be seen by my detailed reports. The work is of that nature that it involves more or less expense; and experience has shown that a systematical and workmanlike job costs but a small per cent. additional over a shabby job without a method; and the expense of maintaining the latter is equal, if not more, and with small benefits comparatively. Consequently, I have used my influence to have all changes properly made. In

the buildings erected during the year, or now in process of construction, I have caused proper sanitary provisions and ventilation to be supplied, which can be done with small additional expense during the construction.

In closing, I am pleased to state that universal approval exists in towns where such improvements have been made, and the desire is general to carry the benefits still farther the coming year.

Detailed Reports of Improvements in School Buildings.

Drury Academy, North Adams. — Is four stories in height in the main part, and three stories in the annex, with superintendent's room, nineteen class rooms, a recitation room and large hall, with a seating capacity of over one thousand. There were two steam boilers in the basement under the stairway corridor, which had been in use many years to supply steam for heating the building by direct circulation. There was no ventilation further than a portion of the rooms were connected with a cold flue in the brick walls and partitions; no movement of air could be discovered. The sanitary appliances were Mott's latrines and slate urinals, placed in the front part of the main basement, without ventilation except a nine-inch galvanized iron pipe from each of the two rooms, running up through the building and above the roof. In compliance with my order for better sanitary conditions and proper ventilation, the town caused the entire steam-heating apparatus to be removed, and substituted the Mahony-Smith system of warming and ventilating, using large warm-air furnaces for the heating, and thoroughly caring for the sanitary appliances. I have carefully tested the workings of the system from time to time, and the following are some of the results obtained.

November 5. The weather was in part fair, with slight west wind, and temperature about 40°. Room one, located in first story, main part, north-west corner; seats sixty. Time, 10.45 to 11 A.M. General temperature of room, 70°. The anemometer test of supply, 1,630 cubic feet, of exhaust, 1,398 cubic feet, per minute. Carbonic acid test, 6.6 parts. Room seven, located in second story, main part, south-east corner; seats forty-eight. General temperature, 70°. Time, 2.30 to 2.45 P.M. Anemometer test of supply, 1,236 cubic feet, of exhaust, 1,362 cubic feet, per minute. Carbonic acid test, 6.6 parts. Room fourteen, located in third story, annex, south-east corner; seats fifty-one. General temperature, 66°. Time, 10.15 to 10.30 A.M. Anemometer test of supply, 1,300 cubic feet, of exhaust, 1,461 cubic feet, per minute. Carbonic acid test, 8.7 parts.

The above rooms each have a cubical air space of about 10,700, and were selected to give the different locations and the working of their respective sections of flues. Of the eight rooms which I tested on this date, all of about the same cubical air space and average seating capacity of fifty, the average anemometer test of supply is 1,382 cubic feet, and exhaust 1,291 cubic feet, per minute. The average carbonic acid test is 8.25 parts. This test is about twelve to fifteen per cent. better than one made the week prior, on a rainy day, with temperature outside of 50°; but see no reason why the above cannot be obtained at all times, with proper care, and with some slight changes. Far better results can be had under favorable circumstances. The improvements are much appreciated by the teachers and pupils, as well as the citizens, and all who are familiar with different conditions.

For several years there has been considerable expression of anxiety as to the safety of the construction of portions of this building; and to remedy this the necessary shafts, flues, etc., for the change, have been strongly made of brick; their locations, together with the additional masonry in basement, were carefully studied; and it is my opinion that the construction, as now improved, is perfectly safe.

[Copy of Letter.]

OFFICE OF A. D. MINER, SUPERINTENDENT OF SCHOOLS,
ROOM 20, DRURY ACADEMY.
NORTH ADAMS, MASS., NOV. 15, 1889.

State Inspector MERRIAM.

MY DEAR SIR: — In response to your request for a line from me in regard to the present working of the heating and ventilating apparatus provided by your order for Drury Academy and the new Church Street building, it gives me pleasure to state that it is working admirably. We seem to secure an ample supply of pure air, heated to the proper temperature, without opening windows or exposing children to dangerous draughts. While the change was expensive, and the cost of heating may be increased five or six cents per pupil, I think the tax-payers of the town, who have children in those buildings, will not complain of the cost, but will approve of the legislation by which this great sanitary change has been brought about.

Respectfully yours,

ANSON D. MINER,
Superintendent of Schools.

The following is a copy of a letter received from Prof. H. A. Pratt, chairman school committee, town of Shelburne Falls, Nov. 15, 1889: —

DEAR SIR: — The legislative act designed, among other things, to secure proper ventilation in the public school buildings, seems to me to have been conceived and enacted in the real interest of all parties called to occupy such buildings, and should be heartily welcomed and cordially supported, not only by the school officers, but also by all the citizens interested in the welfare of the children attending such schools. The intelligent tax-payers of this town have cheerfully provided the means to meet the requirements of this law, and I think will never have occasion to regret the investment.

Yours truly,

H. A. PRATT,
Superintendent.

Prof. H. A. Pratt signs as superintendent; he is the chairman of Shelburne's school committee, and has full charge of all schools in town. His private school is small, and in his own residence. This letter refers to the public "Village School, Shelburne," as per my detailed report.

High School Building, Williamstown. — Was two stories in height; the main part had four class rooms, and the annex one class room and recitation room in first story, with hall in second story. The heating was by two furnaces in basement, and the rooms were connected with a ventilating stack heated by the smoke flues from the furnaces. Some rooms were fairly provided for, while others were bad. The sanitary appliances were but common, placed in small rooms about in the centre of the basement, with stairs leading direct to corridors just between or near the class room doors, and kept the corridors filled with effluvia arising from same. In compliance with my orders for better sanitary provisions and additional ventilation, the town removed the sanitary appliances, and placed in an annex basement, built for the purpose in connection with wardrobes, the Parsons' trough closet and improved urinals, all automatic flushing, and the rooms ventilated by brick flues. An additional furnace was put in, and the pipes to and from rooms enlarged and straightened where thought necessary. In making these changes, they went still farther and raised the main part by mansard roof, and finished same for a hall, taking the former hall for the high school; and erected an enclosed stairway on back side for additional egress, besides other marked improvements. I have visited the building since these changes, and found the general results much improved; although I did not make a thorough test of each part separately, for want of time.

Station School, Williamstown. — Is one story in height, two class rooms with entrance and wardrobes between, rooms heated with coal stoves, and no ventilation. In compliance with orders for proper ventilation, the building has been provided with a brick ventilating shaft, the area about eight feet, and heated by stove, and each room with a jacketed heater of required size. The work is but recently completed, and I have not made thorough tests; but the arrangements and proportions are such that I have no doubt as to the good results obtained.

High School, Great Barrington. — Is two stories in height, with one class room seating about 120, and recitation room in each story; heated by direct steam circulation; no means of ventilation except small cold flues in outside walls, but no movement of air through them. In compliance with my orders for proper ventilation, the town has caused the building to be provided with the Fuller & Warren Company's "common-sense" system of ventilation. I have visited the building twice, and made thorough tests. The general workings of the system and results obtained were good, but with some slight alterations in size of registers, etc., the general average of results will be much improved. The carbonic acid test in first story gave an average of 8 parts, while in second story it exceeded 10 parts. Each of my visits were on rainy days, with a temperature of about 50°, and with low fires in the furnaces.

Housatonic School, Great Barrington. — Is a two-story building, with six class rooms, and was heated by direct steam circulation. No ventilation whatever. In compliance with my orders for proper ventilation, the town caused the Fuller & Warren Company's "common-sense" system of ventilation to be put in. I have visited the building twice, and made thorough tests, the results of which are about the same as given above in the high school.

Fern Cliff School, Lee. — Is one story in height, two class rooms and large wardrobes. Coal stoves were used in these rooms. In compliance with my order for proper ventilation, the building has been provided with the Fuller & Warren Company's "common-sense" system of ventilation. The rooms have a seating capacity of about forty. The day of my visit was fair, with temperature about 50°. The anemometer test gave average supply of 1,000 cubic feet, and exhaust 930 cubic feet, per minute. The average carbonic acid test was 9.1 parts. The improvements in this building, especially in the primary room, which was bad, are very noticeable, and much appreciated by all.

Village School, Shelburne. — Is located in the village of Shelburne Falls, and is two stories in height. The first story has two equal class rooms, the second story has one large room, with two small ones opening from the larger. The corridors, stairs and wardrobes are in an annex. The rooms were heated by coal stoves, and no provision whatever for ventilation, which was very bad, the carbonic acid test running as high as 25 to 28 parts in lower room. In compliance with order for proper ventilation, the town caused a system of ventilation to be put in as follows: a brick shaft was made between the two rooms in first story or near the centre of the building, about 12 feet by 4 feet, and the second story rearranged to correspond with the first. This shaft contains an exhaust flue of about 15 feet in area, heated by a coal stove, the necessary exhaust ducts from rooms down to bottom of main exhaust, and the warm-air flues from basement up to the several rooms. The heat is supplied by two large furnaces in the basement. The system was devised by Prof. H. A. Pratt, a gentleman of many years' experience in school work, and chairman of school committee. The construction was carried out under his supervision, assisted by the selectmen. November 14 I made an anemometer test, and the average supply per pupil was 29¼ cubic feet per minute, with an exhaust of about 23 cubic feet. The day was cloudy, with a temperature of 55 degrees, and the furnaces running very low. The improvements are much appreciated by the people generally.

Village School, Buckland. — Is located in the village of Shelburne Falls, and is two stories in height, with two class rooms in each story, with a nine-foot corridor and stairway between. The rooms were heated by wood stoves, with no ventilation, and were in about the same condition as the Shelburne school. In compliance with order for proper ventilation, the town caused about the same arrangement to be put in as in Shelburne school; and my test the same day gave the same approximate results. In placing this shaft in the corridor, it was thought best to remove the stairs and build new ones front and rear of the shaft, which gives two distinct ways of egress from each room.

Glendale School, Stockbridge. — Is two stories in height, with one room in each story, and was heated by coal stoves, with no ventilation. In compliance with order for proper ventilation, the building has been provided with the Fuller & Warren Company's "common-sense" system of ventilation. November 13 I made an anemometer test, the results of which were very satisfactory. The

session was about closing, so I failed to get the carbonic acid, but it would probably run from seven to eight parts.

Powers Institute, Bernardston. — Is a two-story building, but only the first story is occupied at present, which has two class rooms. They were heated by coal stoves, with no ventilation. In compliance with order for proper ventilation, the selectmen inform me that they have built ventilating flues, in accordance with my suggestion, and put in a large furnace for heat and supply. I have not been able to visit this building to make tests since the changes were made.

Centre and Craneville Schools, Dalton. — These buildings are one story in height, with two class rooms each, and heated with coal stoves, with no means of ventilation, and are crowded. Orders were issued for proper ventilation; but the citizens requested the committee to notify me that they would prefer to build two new four-room buildings, to take the place of these and the high school building, next year. They have provided the present buildings with furnaces and ventilating flues for temporary use, and they are reported to be much improved.

New School Buildings.

Or, Such Buildings as have been finished or erected during the Year, and now in Process of Construction.

Linden Street School, Pittsfield. — Was erected last winter and spring, and was completed for occupancy in April. It is two stories in height, with fourteen rooms, and is provided with the Smead & Northcote complete system of warming and ventilation, and sanitary appliances. I have made three partial tests since its occupancy, and have found very satisfactory results. This building was commenced prior to my assignment in this district, consequently not in compliance with my directions.

Bryant School, Great Barrington. — Is a two-story building, artistic in design, with six class rooms. It was completed about September 1. It is provided with the Fuller & Warren Company's "common-sense" system of ventilation, and sanitary appliances. I have tested the building twice, both times on mild, rainy days, and have found satisfactory results under the circumstances.

Church Street School, North Adams. — Was completed about September 10. It is two stories in height, has a principal's room,

eight class rooms, and two recitation rooms, all of approved size and arrangement. It is provided with the Mahony-Smith system of warming and ventilating, and ventilated flushing sanitary appliances. The heating is done by indirect steam, assisted by a direct circulation in extremely cold weather. I have visited the building from time to time, and find satisfactory results. The following is the average carbonic acid test of the seven rooms now occupied: on October 30, a mild, cloudy day, with temperature at 48°, with low fires, $8\frac{3}{10}$ parts. This building was designed for direct steam heat, and the above system adopted after the building was nearly completed.

School in Clarksburg. — This is a one-room building, and has a ventilating shaft of three feet in area, heated by a small stove and heat supplied by a jacketed stove, arranged in accordance with Dr. Pinkham's circular in State Board of Health report.

Richmond Furnace School, Richmond. — Is a one-story, two-room building, and has a brick ventilating flue, as directed; and each room has a small-sized Henderson furnace or school-room heater, to furnish the heat and supply. It was completed in season for present term.

Union Street School, Greenfield. — This was originally a one-room building. This season another room has been added, and both supplied with jacketed stoves and a ventilating stack, in accordance with Dr. Pinkham's circular.

Greylock School, North Adams. — This is a one-story, two-room building, provided with a brick shaft betwen the rooms, containing an exhaust shaft of seven feet in area, heated by small stove; and warm-air flues from basement up to near ceiling of rooms; and will be provided with a large Fuller & Warren Company's furnace.

New School, Turner's Falls, Montague. — This is a two-story, four-room building, and is being provided with the Mahony-Smith system of warming and ventilating, and sanitary appliances. The plans, as revised, show a very good arrangement of rooms, flues, location of sanitaries, etc., and it will be a model building.

Inspector DEXTER reports: —

SIR: — In regard to the law requiring every public building and every school-house to be ventilated in such a manner that the air shall not become so exhausted as to be injurious to the health of

the persons present therein, I have to report that, while not so much has been accomplished in this direction, perhaps, as might have been wished, still, something has been done, — a beginning has been made from which good results have been obtained. The fact is established beyond question, that a sufficient quantity of pure air can be introduced into the school-room and thoroughly distributed to change it a sufficient number of times to allow each scholar at least 30 cubic feet of fresh air per minute without creating uncomfortable drafts, in buildings where there is an air space of 250 cubic feet for each scholar. I think we may confidently look forward to the time when the most if not all of our school-houses will be as well ventilated as is now the Maxfield Street school in New Bedford and the Foster Hooper school in Fall River, both of which have lately been provided with the Smead system of heating and ventilating, which at present is working very satisfactorily.

Section 1 of chapter 149 of the Acts of 1888 provides that every public building and every school-house *shall* be kept in a cleanly state and free from effluvia arising from any drains, privies, or other nuisances, etc. Section 2 of said chapter 149 provides that every public building and every school-house *shall* be ventilated in such a manner that the air shall not become so exhausted as to be injurious to the health of the persons present therein. Section 3 of the same chapter provides that, whenever it shall appear to an inspector of factories and public buildings that further or different sanitary provisions or means of ventilation are required in any public building or school-house, in order to conform to the requirements of this act, and the same can be provided without incurring unreasonable expense, such inspector may issue a written order, etc. It seems to me whatever is found in a school-room injurious to health, from whatever source it arises, must be considered a nuisance. If, then, carbonic acid gas is found in a school-room in the proportion of from 14 to 22 volumes to 10,000 volumes of air, and when so found is an indication of the presence of a corresponding quantity of other injurious gases, it must be evident that the air *has* become so exhausted as to be injurious to the health of the persons present therein. If credence can be given to all or any of the authorities whose writings on this subject I have seen, carbonic acid gas, when found in such proportions as quoted above, is injurious to health, and consequently a nuisance. I admit that 22 parts is an extreme case, but I have found it in that proportion in two or three school-houses in my district. It is quite common, however, to find 16 and 18 volumes to 10,000 volumes of air. This, then, is a nuisance from which

sections 1 and 2 of chapter 149 provide the school-room *shall* be kept free.

It is considered by teachers in many of our schools to be an absolute necessity to have the windows thrown open for a few minutes between the time of commencement and recess, and the rooms thoroughly aired; and during this time the children kept marching around the room or going through some other form of manual exercise, to prevent taking cold. As it required no special act of the Legislature to permit the use of windows and doors for ventilating purposes, it is to be presumed that this was not considered a proper means of ventilation, or the present law would not have been enacted.

Section 3 provides that the inspector may issue a written order for further or different means of ventilation, if the same can be provided without incurring unreasonable expense. Perhaps the inspector and the authorities to whom the order is sent may differ in opinion as to what might be considered incurring unreasonable expense; if so, then of course this question must be decided by the courts.

There is a law to compel children under fourteen years of age to attend school at least twenty weeks during the year, and also to compel minors under twenty-one years, who cannot read and write in the English language, to attend a day or evening school. In nearly every case the school-house to be occupied for evening schools has been occupied to its full capacity for six hours during the same day; immediately after the evening session the school-house is locked up, with all the foul air it contains, until the next morning, when it is again opened for occupancy. I have been told by the janitors of some of these buildings that in the morning the air was intolerable. I do not see how it could be otherwise, in buildings where there is but little or no ventilation. If the foul air of the school-room is as injurious to the health of the persons present therein as it is said to be by authorities who have written on this subject, then it would seem to me the idea that unreasonable expense had been incurred by having provided such buildings with some suitable system of ventilation could hardly be entertained, whatever the expense incurred. Perhaps this danger has been overestimated; but it can easily be made evident, to any one who will take the trouble to see for themselves, that both teacher and pupil who pass their time in a well-ventilated school-room are free from that feeling of depression so much complained of in all poorly ventilated school-rooms. The following letters, bearing upon ventilation of schools, are respectfully referred to.

OFFICE OF SUPERINTENDENT OF PUBLIC SCHOOLS.
FALL RIVER, MASS., NOV. 21, 1889.

To H. A. DEXTER.

DEAR SIR: — The proper ventilation of school buildings is a subject of great importance and of very general concern. When the necessity of pure air to the enjoyment of good health is taken into view, the importance of the subject becomes apparent; and when the number of children confined in poorly ventilated school buildings is considered, the matter becomes of very general concern. Few school buildings are supplied with a constant current of fresh air; and, because of this, foul air has to be breathed by both teachers and pupils, to their physical injury. This problem of ventilating school buildings is beginning to receive the attention which its importance demands, from architects, educators, and the general public; and I am pleased to say that efforts have been put forth in Fall River to improve the ventilation of two buildings, and in one instance, in my opinion, with marked success. With good air, school-room work can be performed with much less fatigue than in rooms where the air is foul. I hope to see a great improvement within the next few years in this much-neglected subject of ventilation and sanitation of school buildings.

Yours truly,

WM. CONNELL,
Superintendent of Schools.

FALL RIVER, NOV. 4, 1889

DEAR SIR: — In reference to the ventila ion of the Foster Hooper school, I would say that, so far as I can judge during one week's occupancy, it has seemed to be nearly perfect; and, with the quota of pupils assigned to it, I think it would give results satisfactory in every respect.

It is the only school I have ever seen that could make any pretension to perfect ventilation. I think the action of our legislators, requiring, by statute, the authorities to make suitable provisions to supply our children, while in school, with pure air, commendable in the highest degree.

GEORGE W. LOCKE,
Principal Foster Hooper School

NEW BEDFORD, NOV. 12, 1889.

DEAR SIR: — At your request I hereby submit briefly my opinion of the law relating to the ventilation of school buildings, with certain statements regarding those of the city whose schools I have the honor to superintend.

The statute is a wise and beneficent one, in respect to the object that it seeks to attain. There appears to me nothing unnecessary in its provisions, and nothing that should not be exacted. The State provides for the maintenance of schools throughout its cities and towns, and compels attendance at the same by stringent laws, which bear heavily

at times upon individuals, that society at large may not suffer. Millions of dollars are spent each year to carry on these schools, and to construct the buildings in which they are housed. The money for these purposes is raised by taxation under the laws of the State; and, although it is willingly contributed by her citizens, such taxation can only be justified by recognition of the fact that the ultimate good of the State depends on the proper education of her citizens. Any system of schools which provides for the development of the mental and moral faculties of those for whom it was constituted, and makes no adequate provision for their physical well-being, is radically wrong; any measure which shall tend to remedy this fault should receive the hearty co-operation, not only of those immediately concerned, but also of all thoughtful persons. It is true that an enlightened public sentiment has demanded and secured, in the majority of the cities and towns in this Commonwealth, during recent years, school-houses better adapted to school purposes than were those of the past. Many of them are architecturally beautiful, the pride and ornament of the places in which they have been planted; but many of these fine structures, so pleasing to the æsthetic tastes, are as devoid of proper means of ventilation as were the old red school-houses that dotted the hillsides of New England in the days of our forefathers. Let us have plain, substantial school buildings, devoid, if need be, of external or internal decoration, if they are but properly lighted, heated, ventilated, and as perfect otherwise in sanitary requirements as modern science can make them. Teachers and school officers have for years spoken and written on the lack of adequate provisions for the very things that the statute in question is designed to provide; and I, for one, welcome the law for the sake of the teachers and pupils, whose health is impaired by the existence of evils for which there seems to be no rational excuse. It is to be hoped that any movement that may be made to repeal or render inoperative this law, that aims at improved sanitary conditions for our children, will meet with the condemnation from the people at large that such a movement deserves. The statute is an educational trend in the right direction. By the advances made in science, and by enlightened methods of living, the average age of man has been materially raised during the past century. This fact may be regarded as a misfortune by those who decry all progress; but fortunately the majority of people do not so regard the matter. Let the conservative motto, "Let well enough alone," be observed, and all advancement ceases; but when this observance perpetuates a palpable evil, those who lend themselves to it commit a moral wrong, for which there is no justification.

As to the school-houses of New Bedford, they differ but little from those of other New England cities regarding the means provided for ventilation. Some of them are heated by steam — chiefly by direct radiation; some by hot-air furnaces; others by stoves. They are ventilated principally by windows, with what results it is not necessary to state. The Ruttan-Smead system of heating and ventilating has recently been placed in one of the primary buildings, and the results are satisfactory. It is also in an eight-room building, completed during

the past summer. The placing of this system in these buildings is due to the efforts of the school authorities to provide better ventilation, and to comply with the mandates of the law. Different methods of ventilation are being considered by the school authorities of the city, and means of adaptation to the school-houses. The problem that is the hardest for them to solve, is to find any system that will be guaranteed to provide suitable ventilation at a reasonable cost.

Respectfully yours,

WM. E. HATCH,
Superintendent of Schools.

DEPARTMENT OF PUBLIC SCHOOLS, SUPERINTENDENT'S OFFICE.
ATTLEBOROUGH, MASS., NOV. 20, 1889.

DEAR SIR: — Yours of November 11, asking my opinion of the new law, whose object is to secure a proper ventilation of school-houses and other public buildings, was duly received. While I have not time at present to make an extended statement, I wish to be placed on record as heartily in sympathy with the law and its enforcement.

When the plan on which the inspectors proposed to work was first made public in Chief Wade's report last winter, I considered the requirements excessive; but, after devoting much time to a careful study of the matter, closely observing whenever and wherever I have had opportunity, and especially after noting the satisfactory working of the plan of ventilation of our new grammar school-house, which, as you know, was arranged with special reference to the requirements of this new law, I am led to believe the enactment of the law wise, and its enforcement practicable. I wish you much success in your efforts to promote what I consider one of the most important reforms of the day.

The attitude of the school board here, in reference to the law, is such that I think you will find Attleborough acting in behalf of her school children with commendable promptness, instead of waiting to be compelled to obey dictates.

Very truly yours,

J. O. TIFFANY,
Superintendent of Schools.

Harrington School, New Bedford. — This is a new building, and is of brick, two stories high, having four school-rooms in each story, and is heated and ventilated by the Smead system (under floor, so called). When inspected, it was found to be doing good work, but the circulation of air in the different rooms was found not to be as uniform as in the Maxfield Street school, which is also heated and ventilated by the Smead system. In the Maxfield Street school the fresh air comes in and the foul air passes out at the same end of the room; the fresh-air inlet being in the middle of the partition and about seven feet above the floor, and the foul air passing off through registers in the floor in the corners. In

the Harrington building the fresh-air registers are near the corner in each of the rooms, and about seven feet above the floor. The foul-air registers, of which there are seven in each room, are placed in the baseboard; three at the opposite end of the room from the fresh-air inlet, and two on each side of the room. The average amount of air being discharged per minute from each room was 15 cubic feet for each scholar. The volume of carbonic acid gas was found to vary in different parts of the same rooms, from 7.4 to 9.5 volumes to 10,000 volumes of air.

Maxfield Street School, New Bedford. — This is a two-story brick building, having two school-rooms on each floor, and each having a seating capacity for fifty scholars. This building is now heated and ventilated by the Smead system, and is giving the best of satisfaction. When examined, the average amount of air passing out through the foul-air ducts was found to be 32 cubic feet per minute for each scholar. The inflow of fresh air averaged 40 cubic feet per minute for each scholar. There were but two degrees variation in the temperature in different parts of the room. The greatest volume of carbonic acid gas found in any room was 7.4, and the smallest 6.1, volumes to 10,000 volumes of air. There was no material variation from this when taken in different parts of the room.

Foster Hooper School, Fall River. — This is a two-story wooden building, having one school-room and two recitation rooms in each story. This building has not been used except for evening schools for the past two years, until the present time. It was formerly ventilated in the old style, each room having one flue 12 by 16 inches, which opened into the attic. It having become necessary to occupy this building again for day schools, it has been newly fitted up, and supplied with the Smead system of heating and ventilating, which is at present giving entire satisfaction. The school-rooms are both supplied with seating capacity for one hundred scholars. I was informed that, with the exception of a short time at the beginning and at the close of the sessions, there were never more than seventy-five scholars in either school-room at one time, the others being in the recitation rooms. Each recitation room has one fresh-air inlet, 12 by 13 inches. The foul-air outlets, of which there is one in each room, are 15½ by 15½ inches. The school-rooms have each two fresh-air inlets, and each inlet is 2 feet square. The school-room in the first story has two foul-air outlets, both of which are 23 inches square. The school-room in the second story has four outlets, each of which is 21 by 13½ inches.

When the building was inspected, the temperature on the outside was 56 degrees. The temperature of the air in the school-room at the inlets was 84 degrees, and at the outlets 72 degrees. The temperature was found to vary two degrees when taken in different parts of the room; the lowest being 70, the highest 72 degrees. The inflow of fresh air, when reckoned by the number of seats, was 25½ cubic feet for each pupil per minute; and, when reckoned for the actual number present (seventy-five), 34⅛ cubic feet per minute. The outflow of foul air was found to be for each of the seventy-five scholars present 24⅕ cubic feet per minute. The greatest volume of carbonic acid gas found in any room was 7.4, and the smallest 7.1, to 10,000 volumes of air.

Sanford Street School, new building, Attleborough. — This is a new, two-story wooden building, having two school-rooms and two recitation rooms in the first story, and one school-room and recitation room in second story, with a total seating capacity for two hundred and twenty scholars. It is heated by both direct and indirect steam. There is one register in each school-room in the first story, and two in the large room in the second story, for indirect heating, 18 by 25 inches each. There is also one in each of the recitation rooms, 12 by 15 inches. These registers are located in one corner of the room, 6½ feet above the floor. The foul-air registers are in the floor at the opposite end of the room, and have the same capacity as the other registers. The foul-air ducts from all the rooms extend down to the basement, and there enter the ventilating chimney. This chimney has a net area of 19 square feet, and is heated by a steam coil. The average amount of pure air coming into the different rooms through the indirect registers was 17⅝ cubic feet per minute for each scholar. The amount of air passing off through the foul-air registers was 20⅖ cubic feet (average) per minute for each scholar. The air in the different rooms contained from 8 to 9.1 volumes of carbonic acid gas to 10,000 volumes of air.

High School, North Attleborough. — This is a two-story wooden building, having one school-room on each floor. The room in the first story is used for the grammar school, and has seats for forty-eight scholars. The room in the second story is the same size as the room below, and has seats for ninety scholars. The area of each room is 16,600 cubic feet, giving to each pupil in the grammar school 345⅝ cubic feet, and to each pupil in the high school 184⅘ cubic feet, of air space. In the second story there is one small recitation room, and also a small room which is fitted up

and used for a chemical laboratory, and is also used for recitations. There are two recitation rooms in the first story, one of which is directly under the laboratory. There is an opening from each of these rooms and also from the school-rooms in both stories into the same ventilating shaft. This shaft is 2 by 3 feet. The registers through which the foul air passes into this shaft are made of boards, with a few irregularly shaped holes in them, and measure 18 by 20 inches, from which fully two-thirds must be deducted to find the net area of air space. In this shaft just above the second floor a gas jet is kept burning, for the purpose of heating the shaft and so creating a draft. It was found, however, that the draft, which was very light, was downward as often as it was upward. This shaft opens into the attic. There is another smaller ventilating shaft, through which there was no draft at all, into which there is an opening from the school-rooms in both stories. This shaft probably opens under the attic floor, as it does not show above the floor. The building is heated principally by direct steam. There is one register, 15 by 20 inches, for indirect heating, in each story. The inflow of fresh air through this register in the second story was $4\frac{1}{5}$ cubic feet per minute for each scholar. The volume of carbonic acid gas in the recitation rooms in the second story varied but little from that of the school-room; the average for each room being 18 volumes to 10,000 volumes of air. I was informed by the teacher that the air in the room was much better at this time than it would be found in stormy weather, when the windows could not be used so freely for ventilating purposes.

Pine Street School, Fall River. — This is a two-story wooden building, and has three school-rooms on each floor, with an average seating capacity for sixty-two scholars. There was an average attendance in each room of forty. When this building was inspected, some of the windows were found open in all the rooms, for the purpose of ventilation. There is a ventilating flue in each room, with registers 10 by 22 inches. In one room there was found to be $2\frac{1}{5}$ cubic feet of air passing off through the foul-air registers per minute for each scholar, and in another room $1\frac{9}{10}$ cubic feet. In the other six rooms there was no movement of air through the foul-air registers. When making an examination of the attic, it was found that only two of the flues came above the attic floor. The other flues, if they extend to the attic, must open under the floor. The building is heated by steam, principally indirect. One of the fresh-air inlets was found closed, and the air to the coils taken from the basement. The water-closets are in the basement, and when previously examined the drainage was

found to be bad; but this has been remedied; still, the closets for boys are not sufficiently ventilated. The volume of carbonic acid gas in the different rooms ranged from 12.5 volumes to 18 volumes to 10,000 volumes of air.

Davenport and Robeson Schools, Fall River. — These buildings are mentioned, as they fairly represent in the matter of ventilation all the other school-houses in their class in Fall River. The Davenport is a three-story brick building, having six school-rooms in the first and second stories each, and three school-rooms and large hall in the third story. The average seating capacity for all the rooms is fifty-four. There is a slat ventilating tower on the top of the building. In some of the rooms there are two ventilating flues, while in others there is but one. The average size of the registers in these flues is 12 by 14 inches. The flues from all the rooms discharge into the open attic. When I last inspected this building, the weather was stormy and the wind was north-east. I found the flues in the six rooms in the north end of the building were carrying off 10.5 cubic feet of foul air per minute for each pupil, while there was no perceptible draft in the flues in either of the other rooms. When I previously examined this building, the weather was pleasant and the wind south-west. At that time there was no movement of the air through the flues in the rooms in the north end of the building; but in the other rooms there was some draft, which varied considerably in the different rooms. The greatest amount of air found passing off through these flues in either room was 5½ and the smallest 2½ cubic feet per minute for each scholar. This result would seem to show that it depends entirely upon the direction of the wind as to which room shall receive benefit, with the present system of ventilation. The volume of carbonic acid gas was found to range in the different rooms from 12 in the best rooms to 16 volumes in the worst room to 10,000 volumes of air.

The Robeson school-house is a three-story brick building, and has two school-rooms on each floor, with an average seating capacity for sixty-four scholars. I have inspected this building several times, and find that the only means of supplying the rooms with fresh air is by the windows. There are two large ventilating flues in each room, which, if properly arranged, might do good work, but at present are of no account.

Bedford Street School, Fall River. — This is an old two-story wooden building, having one school-room and one recitation room in each story. The room in the first story has seats for eighty-

eight pupils, and the room in the second story has seats for eighty, with an average attendance of eighty and sixty-three respectively. The area of each room in cubic feet is 10,090, which, when reckoned for the actual number of scholars in attendance, will give to each in the first story 114$\frac{7}{22}$ and in the second story 160$\frac{19}{63}$ cubic feet of air space. The building is heated by a hot-air furnace, and until the present term had no means of ventilation except by the windows. There is a small wooden ventilating flue in one corner of the school-rooms, but it is entirely worthless. I have visited this school several different times, for the purpose of testing the air, always using Professor Wolpert's air tester for this purpose. When the weather was pleasant and the windows could be let down at the top on both sides of the room, I found the air to contain from 14 to 16 parts of carbonic acid gas to 10,000 parts of air; and in stormy weather, when the windows could not be used so freely, or not at all, I then found from 18 to 22 parts of carbonic acid gas to 10,000 parts of air.

During the summer vacation $500 was expended on this building for the purpose of improving the ventilation. A brick shaft, 2 by 4 feet (net), was built, with a heater in it near the bottom; and a foul-air duct from all the rooms enters this shaft below the heater. The warm-air registers have been taken from the floor and placed in the ceiling, 6$\frac{1}{2}$ feet above the floor. The foul-air registers are in the floor at the same end of the room. With this system of ventilation, when, on account of the mildness of the weather or other cause, the temperature of the rooms becomes such that it is necessary to shut off the inflow of warm air, the air in the room soon becomes so exhausted that the windows are resorted to for a fresh supply. I have visited this building three times since this system was put in, and each time found the warm-air registers closed; and, when tested, the air was found to contain 14 and 16 parts of carbonic acid gas to 10,000 parts of air.

Inspector BUXTON reports: —

SIR: — In making up my summary report for the year which is now drawing to a close, I find that it has been marked by a steady advancement in many directions. As the inspection laws and their requirements become better understood year by year, by the people, there is much less friction, and the compliance has grown more general.

The law requiring all buildings more than two stories in height, which come under its provisions, to be provided with ample means of escape in case of fire, is now very generally complied with.

The number of buildings so poorly constructed as to make it virtually impossible to provide as good means for escape as would seem desirable, is happily growing less year by year. There is also a notable improvement in the manner of constructing fire escapes, proving the wisdom of uniform and specific requirements in the making and placing them. In all school buildings where additional means of egress seemed necessary, there have been substantial tower stairways constructed, instead of the ordinary outside fire escape; and I am glad to say that, in all cases of this kind, the authorities having such buildings in charge heartily agreed with me in the opinion that nothing less permanent or substantial should be erected, as a means of escape from a school building in case of fire. And I trust that the day is not far distant when all public buildings shall be of fire-proof material, and so constructed that outside fire escapes will be unnecessary.

Chapter 149 of the Acts of 1888, relating to proper ventilation and the sanitary condition of certain classes of buildings, has naturally claimed much attention, being a new enactment. There is always more or less pioneer work necessary in attempting to enforce a new law; but, in reviewing the year, I feel that good progress has been made. It is a law which is far reaching in its nature, and one whose conditions and requirements are not very readily comprehended; but it is a law which commends itself to all who understand its intent, as being necessary and reasonable. Pure air is of vital importance to all, but for children and youth it is absolutely indispensable.

The chief difficulty encountered is not in the enactment requiring that the air in our school-rooms, factories and workshops should be pure. The teaching of our schools and colleges for years has been such that people are generally aware of the importance of the matter, as affecting the health of the human system. They understand that it is a subject which vitally affects the welfare — nay, even the very life itself — of those nearest and dearest to them, and generally admit that it is right and necessary. But, as to the best means of obtaining pure air, the proper appliances necessary for securing a continuous and adequate supply in all parts of a room occupied by many people, without exposing any to draughts, is a subject which opens up wide avenues for discussion and differences; and it is upon these matters that public opinion is divided, and about which even those who claim to be authority sometimes differ.

It is a comparatively simple process, that of putting in or taking out the air from a room; the difficulty is in getting good circulation, so that all parts of the room will have pure air at the same

time. In the past year this perplexing problem has been solved to a considerable degree, and in the near future much better results can be expected. The very common habit of opening windows in school-rooms for ventilation is pernicious in cold weather. The use of window boards is undoubtedly an improvement; but even with these it is a hazardous practice, and should be condemned, as it is seldom done without creating a draught dangerous to any one exposed to it.

The perilous risk is much greater in the school-room than in the workshop or factory, owing to the sedentary habits of the pupils; for, while the teacher's mind is absorbed in the legitimate business of teaching, a window is very apt to be left open longer than is absolutely necessary. Whenever ventilation is attempted by opening the windows, it should be done while the pupils are allowed a few moments for recreation, or are absent from the room; for in no other case can it be done with safety. It is well understood that no great reform can be inaugurated without more or less friction, where the matter of money is involved; just as, in the case of the compulsory school law, when first enacted its friends were comparatively few, while it is now universally conceded that the State should demand that every child receive school training sufficient to make an intelligent citizen. It follows, as a logical consequence, that our school buildings should be so constructed that the physical well-being of the child is guarded and protected in every possible direction.

The school-room is the nursery of the nation, where the children of the people pass many of their waking hours; and patriotism, good citizenship, humanity and benevolence, favor prosecuting the work of making the school-room a place that will foster and develop, in symmetrical proportions, the physical, mental and moral attributes of the child.

These feelings, motives and purposes all being enlisted upon the side of good ventilation, I am confident that in time all opposition will disappear. All teachers, school officers and citizens, whose duties give them the opportunity of thoroughly understanding the facts in the case, are wide awake to the necessity of good ventilation; and, while a good deal of progress in securing results under the law has been made during the past year, as its requirements are to be better understood, the advancement will be still greater during the year to come.

The law enacted by the Legislature of 1888, requiring plans and specifications of certain classes of buildings to be submitted to the inspector for approval before their erection, has been very favorably received by the public, and in most cases cheerfully and

readily complied with. In a few instances even more has been done by the owner than was required. The beneficent results of the law begin to be apparent in buildings newly completed or now in process of erection.

The requirements made under the provisions of this act for suitable means of escape, and to prevent the spread of fire, have resulted in all buildings erected during the past season being provided with two separate and distinct ways of escape, each being accessible from all parts of the building. The space between the furrings or studding on the outside walls on each story has been filled to the height of eight inches with brick properly laid in mortar, or mortar alone, as the case required. All partitions have been made comparatively smoke-tight at the bottom. Special pains have been taken to prevent the spread of fire in hallways, by filling the space between the top of the partitions and the lining floor above with brick and mortar, with an additional fire stop half way from the floor to the ceiling, while the under side of the stairs has been lathed with wire laths. All channels or pockets for gas, water, steam or soil pipes have been made practically smoke-tight at each story. These appliances, adjusted in a thorough and workmanlike manner, will do much to prevent the spread of fire, confining it to the room where it originates, permitting the occupants to escape safely, and preventing the loss of property.

I have been told by owners of buildings that these precautions are worth all they cost in preventing the structure from becoming infested with vermin, and are of great value in keeping the building warm. These are benefits certainly, but are secondary, of course, when compared with the safety of life and property.

As a proof of the feeling with which this law has been received by the public, allow me to append the following letters, which have been received by me: —

Springfield, Mass., Nov. 18, 1888.

Sir: — The law enacted by the Legislature of 1888, chapter 316, requiring plans and specifications of all buildings which come under its provisions to be submitted to the State inspector for his approval before erection, is, in my opinion, entirely reasonable, and I heartily endorse it. I have had two buildings erected the past season which come under its provisions. The requirements made by you for protection against the spread of fire and smoke have been fully carried out, and I am satisfied that the money thus expended is a good investment, as it adds to the safety of the occupants of the buildings, and also to the value of the property.

Yours very truly,

John Omstead.

Holyoke, Mass., Nov. 12, 1889.

Dear Sir: — In answer to your inquiry as to the effect of the "Act to regulate the Erection and Construction of Certain Buildings" (chapter 316, Acts of 1889) upon the character of the buildings erected in this city during the present season, and my opinion of the measure as an act for the good of the people, it gives me pleasure to say that I consider it of great value as an aid to our "fire ordinance," in securing safer buildings in tenement quarters; and I trust that its provisions may be extended and its scope enlarged to reach all points of unsafe construction, thus supplementing more fully local enactments. This act is a good beginning, and I believe more comprehensive enactments from the same source cannot be but proper and beneficial to all.

I am very truly yours,

E. A. Ellsworth,
City Engineer and Inspector of Buildings, Holyoke, Mass.

Department of Inspection of Buildings of Massachusetts,
Springfield, Mass., Nov. 10, 1889.

Would say that, in my judgment, the act of the Legislature, chapter 316, to regulate the construction of certain buildings, is an act that the general public have long felt the need of. The feeling of security we have, that our friends who occupy or labor in these large buildings can get from them in safety in case of fire, is a relief that far more than pays the extra cost of this special construction. It seems rather arbitrary to the owners of buildings at first: but, when they have the protection and escapes completed, they would not have them taken away for twice the amount they cost.

I have always felt that there was far more truth in the old adage, that "an ounce of prevention is worth more than a pound of cure," than people give it credit. It seems as though this adage presented itself very forcibly to our minds when new buildings are in the process of construction; when for a very little extra expense they can be made very slow burning, giving the occupants of such buildings ample time to escape from them in safety, and also holding the fire somewhat in check, giving the fire department time to arrive and get control of the flames before they have swept through the entire building, thus saving the owners a large amount of fire damage; hence it must reduce the cost of insurance.

God speed the good work of devising ways of saving the lives and property of our fellowmen.

Yours truly,

F. S. Newman,
Architect.

Inspector Hunt of Salem reports: —

Importance of Pure Air.

The subject of pure air in public buildings has for a long period engaged more or less attention from those who are confined to such places, in employment, or for longer or shorter periods in the transaction of business. In legislative halls, court houses,

city halls, theatres, churches and school buildings, the complaints have been long and loud, that, while more expensive buildings, elegant and tasteful in architecture, have been adding to the debts of States, cities and towns, the most important feature of all, that of providing pure and healthy air, has been lost sight of, either from negligence, or ignorance, or from pecuniary considerations. Various attempts have been made, from time to time, to remedy the defects complained of; but whether it was one of the "lost arts," or an art never discovered, has been a question puzzling even to men of sanitary science. It may be remembered how many experiments have been made in the State House in Boston, since the extinguishment of wood fires in the legislative halls and committee rooms, to secure comfort without dangerous draughts of air upon bald heads, to the inconvenience of delicate or infirm constitutions. It was not until a committee of inquiry visited the fortune-squandering capitol at Albany, N. Y., the almost equally expensive court house in New York, and the capitol at Washington, that they learned from the engineer of that building that the best devised system he knew of was by a Boston architect. The system which has since been adopted in the State House has brought more satisfaction than any previous one, and silenced the general complaint which so long prevailed. One of the greatest difficulties now is in the over-heating, either through neglect or from the want of care where a large building is provided for. In court rooms the sense of smell is one of the keenest detectives, particularly by those from the fresh, out-of-door air. Judges, officers and juries may by long confinement become accustomed to the noisome exhalations; but they groan under them and many lives are shortened by breathing in such an atmosphere. Yet it is not in such buildings alone that the complaint has been a grievous one. Fortunately, the subject is becoming more fully discussed by competent men of science, and their views are becoming more generally known. The testimony which we first propose to introduce, is as follows: —

In the "Technology Quarterly" for May, 1888, Professor S. H. Woodbridge, A.M., states, in a paper entitled "Primary Hints for the Inspection of Building Ventilation," that "the fact of a sensible odor or of closeness within a building, perceivable on entering it from outside air by one having a fairly acute sense of smell, may be regarded as evidence warranting further examination." The odor may be found to be unavoidable in origin and harmless in character; the former when peculiar to, and inseparable from, the employment of those occupying the building, the latter when the odor is neither of such intensity nor morbific character as to

be prejudicial to health. The odor may be chiefly or solely due, however, to the presence of the occupants, and the absence of a sufficient air supply. In the absence of other carbonic acid gas than that produced by respiration, the cause of an odor, as between those which are and those which are not due to inadequate air supply, may be mostly discovered by a chemical determination of the amount of that gas present in the air. By the amount by which the carbonic acid gas exceeds the normal, the evidence of imperfect ventilation as the cause of an odor increases; and by the amount by which that gas approaches the normal, the evidence indicative of some other cause increases. The normal of carbonic acid gas in outside air may be put at .0004; and .0006 found within a building indicates an air movement through it which may be regarded as adequate for perfect artificial ventilation; .0008 as fair for rooms occupied through long sessions, and good for those occupied through short sessions, as churches, halls, theatres, etc.; .0010 bad for long and fair for short sessions. Beyond .0012 for long, and .0015 for short, should not be tolerated.

The amount of air supplied, though not a reliable indication of the efficiency of the ventilating work done by it, may be taken as an approximate test of the cause — as between the two classes of causes under consideration — of odor in a room or building. Thus 3,000 cubic feet per hour per head for adults may, in general, be considered an adequate supply for perfect artificial ventilation, in which the cubic space per head does not exceed that amount; 1,800 cubic feet per head for long sessions as fair, and for short sessions, good.

The following table of comparison, giving the condition of the air in and around Boston, may be of interest: —

Outer Air in and near Boston.

Locality.	Date and Time.	Temperature by Centigrade.	Barometer.	Weather.	Carbonic Acid.	
					Volume.	Percentage.
	April, 1880.					
Cupola, State House, Boston, . . .	8.45 A.M. to 2.20 P.M. 2.20 P.M. to 3.15 P.M.	20.5	30.372 29.872	Clear, S.W.	.3139*	
	Jan., 1870.					
College Yard, . .	9.00 A.M. to 4.00 P.M.	. .	29.973 29.973	Fair, S.W.	.0308†	.0337†

* By Mr. Pearson. † By Prof. Wm. B. Hills.

Mr. Pearson's twenty-one observations of the outer air of Boston in spring months give an average of .0385 parts of carbonic acid in a million.

Prof. Wm. B. Hills', of Cambridge, eleven observations of the outer air of Cambridge in winter, give an average of .00337 parts of carbonic acid in a million.

An inspection of the high and nine primary school buildings, in Salem, show the following results: —

Browne School, Ropes Street, July 24, 25. This is a brick building, two stories, with six school-rooms, averaging thirty-seven scholars each. Heated by furnaces; privies in basement, ventilated into chimney by 4 and 6 inch galvanized iron pipes. Height of basement, 7 feet. May 20, Professor Wolpert's air test in room No. 3 denoted .0016 and in room No. 4 .0020 volumes carbonic acid gas.

Endicott School, Boston Street. A wooden building, two stories, four school-rooms, averaging thirty scholars. Heated by furnaces; privies out of doors. Height of basement, 8 feet 5 inches. Recently furnished with Fuller & Warren Company's sanitary closets. On May 27, at 11.30 A.M., Wolpert's air test denoted .0016 volumes.

Pickman School, Dunlap Street, is a two-story wooden building, comprising four rooms, and averaging thirty-one scholars. Heated by furnaces; privies in the school yard. Basement 8 feet 5 inches high. May 29, at 11.15 A.M., Wolpert's test denoted .0025. Internal temperature, 68 degrees. (July 24, repairing floors.)

Lincoln School, Fowler Street. This is a wooden building, two stories, four school-rooms, averaging thirty-seven scholars. Heated by furnaces; privies located in the basement, ventilated by a 9-inch galvanized iron pipe, leading up through the roof; no visible outlets for foul air from either of the rooms. May 27, Wolpert's air test denoted .0016.

Upham School, North Street. Built of wood; two stories, four rooms, and averaging twenty-nine scholars. Heated by furnaces; privies in the basement, ventilated by 4-inch and 6-inch cast-iron or galvanized pipes, leading to a chimney. Basement 8 feet 5 inches high. Foul-air shafts (wood) from rooms on the first floor, run up alongside of chimneys; outlets for rooms in the second story are in centre of ceilings. May 31, at 11.10 A.M., in room No. 4, first story, Professor Wolpert's test showed .0020; second story, .0016 volumes; temperature, 70 degrees F.; windows open at top four inches.

Prescott School, Howard Street. A wooden building, two stories, four rooms, averaging twenty-six scholars. Heated by furnaces; privies in the basement; ventilated into the chimney. Besides upper outlet in chimney, each room has an outlet hole cut through the edge of teacher's platform. June 10, in room No. 4, Wolpert's air test denoted .0010; fifty-three scholars; thermometer, 76 degrees F.; all windows open at top 6 inches; clear weather.

Lynde School, Herbert Street. Built of wood, two stories and a basement school-room; five rooms, averaging forty scholars each. Basement school-room heated by stove; no ventilating apparatus, except two Eureka ventilators, one out of order; forty-four scholars. Professor Wolpert's air test, .0020. First story, north side, window ventilating boards; one Eureka ventilator, inoperative; ceiling outlets stopped up with boards. The same in the other rooms as in first and second stories. First floor, south side, two window ventilating boards in place. Second story, north side, one Eureka ventilator, acting as an outlet. Second story, south side, one Eureka ventilator, acting as an outlet, and one inoperative.

Carleton School, Skerry Street. A two-story wooden building, four rooms, averaging thirty-six scholars. Heated by furnaces; privies in basement, ventilated into chimney. Basement 8 feet 9 inches high. Transom, 2 by 3 feet, over each school-room door. June 25, 2.25 P.M., temperature, 74 degrees, room No. 4, eighty-two scholars, with seventy-two seats, Wolpert's air test denoted .0011 volumes; entry and basement, .0011; doors and windows open. November 5, 2.30 P.M., room 4, temperature, 74 degrees. Sample grains of air sent to Prof. W. B. Hills, Harvard Medical School. His certificate of analysis gives 11.94 in 10,000 volumes. On November 9, 3 P.M., another air test was taken in room No. 4, and the sample carried to Professor Hills. His return certificate gave 16.44 in 10,000 volumes. Temperature, 70 degrees F.

Bertram School, Willow Avenue. Built of wood, two stories, four rooms, averaging forty scholars. Heated by furnaces; privies in the basement. Basement 7 feet 9 inches high. Previous to July 1, these privies connected with chimney by one 4 and one 6 inch galvanized pipe. May 14, Professor Wolpert's air test showed in rooms Nos. 3 and 4, first story, .0029 volumes, and in

second story .0020 volumes. Temperature, interior and exterior, 68 and 70 degrees F. Slight fires in furnaces for several days preceding. Foul air was noticed near the teacher's platform in rooms Nos. 3 and 4, coming from the top and bottom registers in the chimney. It appeared that the builder's "outlets" on this occasion had become "inlets," admitting sewer gas or effluvia from the privies or the basement. For several weeks the teachers perceived a foul atmosphere, particularly during the easterly winds and rainy weather. On May 14 this school was closed for all school purposes by order of the mayor and chairman of the school committee, on account of seven cases of diphtheria among the boys assembling in this school building. There has been a great deal of discussion, with no little difference of opinion, in relation to these cases of diphtheria, four of which proved fatal. Whether they originated within or on the premises of this school building, or from the outlets of the neighboring sewers, or from the adjacent "dumping" grounds, it is difficult to determine; yet the condition of the air in several of the school-rooms, particularly those in which these boys attended and were obliged to leave school, on May 8 to 11 inclusive, was highly favorable to the nourishment and propagation of this epidemic, as is clearly shown by the air tests made at that time. The parents of these boys, however, are strong in their belief that the disease was imbibed in the rooms of the Bertram school-house. It may be that the outside clothing of some one of those boys, in some contagious way, conveyed it to his companions through their clothing, while hanging together in the anterooms. All subsequent cases among the pupils attending this school, fifteen in number, were, without doubt, from contagion, the result of loose or imperfect quarantine provisions, in South Salem. If not for the dismissal and prompt suspension of the school sessions, and the immediate application of sanitary measures, the results of this foul air might, and probably would, have been more disastrous. The air tests made in the high school and the nine primaries showed that the school-rooms in these buildings were not unlike in atmospheric conditions to those of the Bertram, while there were not the same predisposing fatal causes. In the cities of Lawrence, Newburyport, Somerville and other localities in Massachusetts, there has been noticed the same foul condition of school-rooms, with many cases of diphtheria.

In compliance with an order, dated May 17, for "improved ventilation," etc., in this building, the pipes connecting with the chimneys were changed, and flues built leading upward to a ven-

tilator cap on the roof of the building. Two special flues leading from the cloak-room were built to the roof. A jacketed stove was placed in basement to aid the draughts. All school-books were burned, by order of the school board. The rooms and the building were painted, the basement thoroughly cleansed, the sanitary closets renovated, and whitewash and disenfectants were freely used. An air test was made September 21, denoting .0010 volumes in every part of the building, including the basement. A decidedly more active fresh-air supply was noticeable.

High School, Broad Street. Brick, three stories, including four school-rooms; 300 scholars; third story, east room, heated by furnace, not running. Six small registers lead into a space between sheathing and the outer brick walls of the building, 3 to 4 feet wide; apparently no connection with the outer air, except by cracks, etc. Thirty-four gas burners in this room; no air current in either inlets or outlets. Outlet in ceiling 1.5 feet square; obstructions, one-third. September 23, Wolpert's air test denoted .0020 volumes; September 26, .0040. Temperature, 72 degrees. Third story, west room, furnace running, but damper closed; inlet register fastened. Seven small registers and one large register, opening into space between walls the same as in east room. Two ceiling outlets and one trap door in ceiling open. Air supply probably came from lower stories, by stairways. Fifty-four gas burners in this room. September 23, Wolpert's air test, .0033; September 26, .0025. Temperature, 73 degrees F. Second story, west room, no air current from any one of the six Eureka ventilators. No air currents in lower outlets. Second story, east room, two Eureka ventilators acting as outlets; four others, inoperative. Transoms over doors from entries to school-rooms; two chimneys in each room; top and bottom outlets in each; no air currents in lower outlets. September 23, Wolpert's air test .0016 at 10.20 A. M.; weather clear and cloudless; wind north-west, strong. September 26, air test .0040; wind light, with rain, south-east. One hundred and fifty scholars in this room. Second story, west room, six Eureka ventilators, and no air current either in or out. No air currents in upper or lower outlets. Chimneys the same as in east room. Transoms over doors in entry to school-room. One hundred and fifty scholars in this room. September 23, Wolpert's air test .0012; September 26, .0025. Temperature, 73 degrees F. Gas burners used in lowery weather. The order dated September 28, for additional windows in the third story of this building, has been complied with.

The following tabulated observations were made on the preceding nine primary and high school buildings: —

Schools.*	Number of Room.	Total Area of Inlet Openings. Square Feet.	Total Area of Outlet Openings. Square Feet.	Velocity at Upper Outlet Register Feet per Minute.	Velocity at Lower Outlet Register. Feet per Minute.	Total Indicated Discharge from Room. Cu. Ft. per Minute.	Total Indicated Discharge from Room. Cu. Ft. per Hour.
Browne (Ropes Street),	2	–	2 0	–	282	282	16,920†
	4	–	2 0	340	–	340	20,400
Endicott (Boston Street),	1	–	–	–	–	–	–
	2‡	2 3	2.0	55	–	55	3,300
	3‡	2.3	2.0	–	–	–	–
	4	3 3	2.0	–	–	–	–
Pickman (Dunlap Street),	2	2.3	1.0	‖	‖	‖	‖
	3	2.0	1.0				
Lincoln (Fowler Street),	1	abt 2.3	none.	¶	¶	¶	¶
	2	abt 2 3	none				
	3	abt. 2 3	none.				
	4	abt 2 3	none				
Upham (North Street),	1	2 3	1 7	–	–	–	–
	2	2.3	1.5	140	–	214	12,840
	3	2 3	1.5	–	–	–	–
	4	2.3	1 7	–	–	–	–
Prescott (Howard Street),	1	2.3	1.6	126	–	131	7,860
	2	2 3	1 6	110	–	114	6,840
	3	2.3	1 6	80	–	83	4,980
	4	2 3	1.6	100	–	104	6,240
Carleton (Skerry Street),	1	2 2	0.8	110	–	88	5,280
	2	2.2	0 8	120	–	96	5,760
	3	2 2	0 8	100	–	80	4,800
	4	2 2	0 8	130	–	105	6,300
Bertram (Willow Avenue),	1	2 3	1 6	173	90	208	12,480
	2	2 3	1.6	145	96	190	11,400
	3	3.3	1 6	167	90	204	12,240
	4	2 3	1.6	110	–	89	5,340

* Air test, — See comparison; see table mill operatives and pupils.
† Upper register closed.
‡ Room over No. 1.
§ Room over No. 4.
‖ No measurements taken, repairs going on.
¶ No measurements taken, there being no visible outlets.

Room.	Total Square Feet. Inlet Openings.	Total Square Feet. Outlet Openings.	Velocity in Upper Outlets. Feet per Minute.	Velocity in Lower Outlets. Feet per Minute.	Total Indicated Discharge from Room. Cu. Ft. per Minute.	Total Indicated Discharge from Room. Cu. Ft. per Hour.
LYNDE SCHOOL.						
Basement, South Side,	0.6	none.	–	–	–	–
First Floor, North Side,	2 6	none.	–	–	–	–
First Floor, South Side,	2 6	none	–	110	–	–
Second Floor, North Side,	2.6	1.04	–	–	129	7,740
Second Floor, South Side,	2 6	none.	–	–	24	1,440
HIGH SCHOOL.						
Third Story, East,	1.04	6.0	–	–	–	–
Third Story, West,	1 04	7.9	av 128	av. 82	214	12,840
Second Story, East,	4.8	4.0	av. 86	–	206	12,360
Second Story, West,	4.8	4.0	av. 85	–	170	10,200

September 21. — External temperature 64° Fahrenheit; light wind, — cloudy.

Lynn. — The Sanborn school-house, built in 1881, is of brick, apparently well built, two stories high, and containing eight school rooms. It was steam heated, the apparatus being an Ingalls & Kenrickson, seventeen-section boiler with about 1900 feet of radiation surface; about four-fifths of which is indirect surface, so called, in the school-rooms, halls and anterooms. The building is in rather an exposed position, the walls are thick, and there seems to be no special difficulty in heating it, the apparatus being about equal to its work under present conditions.

Air was supplied to the school-rooms by small hot-air pipes over indirect radiators, and is supposed to be withdrawn by openings into large chimneys, of which there are two, one on each side of the building. Besides, there are openings, one from each room, into small ducts, partly in the walls, and partly in the school-rooms; said ducts open into small towers on the roof. Of these ducts it need only to be said, that it is uncertain whether they act as inlets or outlets, and that their effect is probably very small either way.

For the eight hot-air supply pipes there are four "indirect" radiators, each radiator warming the air for the two rooms above it. This results in an unequal distribution of the hot air, — the upper room in each case usually getting the larger share. The pipes are ten inches, so obstructed by wire netting and registers, that probably each one has not more than four-tenths of a square foot clear opening. The amount of air supplied through them can scarcely be more than one-fifth of what is needed, and there are no other channels of supply except the opening due to imperfect joining.

The chimneys above mentioned are quite large, the area bounded by the outer walls of each being nearly fifteen square feet. But these are largely useless, on account of the inside partitions. Although only one chimney was ever likely to be needed for the steam boiler, both chimneys were built alike, each containing a round central flue twenty inches in diameter, and four others of irregular shape around it. The two flues nearest the school-room, in each chimney, are probably of some effect in drawing out foul air; but the outer flues, and in one chimney the central flue, seem to be wholly useless, having no connection with the building. One of the chimneys is warmed, doubtless, somewhat, by the hot gases from the boiler furnace; the other is not warmed at all, and the currents in it must be sluggish. The central core in each chimney runs up to a level about seventeen feet above the eaves, and about thirteen feet above the outer wall of the chimney.

At the present time the air supply is ample, and entirely under control. Air tests give an average outflow from the school-rooms of at least thirty cubic feet per scholar per minute.

The Red Rock, Chase Avenue, Blossom Street, Jackson Street, and Baltimore Street school buildings are supplied with the improved heating and ventilating arrangements, as planned by Mr. Theodore P. Perkins, C. E., and recommended by Dr. J. G. Pinkham, chairman of school board.

The Hood school building is of recent construction. "The arrangement for heating and ventilating," say the committee, "is a a bad imitation of the Ruttan-Smead system." Air meter measurements show a discharge from lower west room of 7,704 cubic feet per hour, and from the upper east room of 1,472 cubic feet per hour.

The high school building, located on High Street, has been condemned. The plans and specifications are made for a brick building with twenty class-rooms, heated by steam, indirect radiation; water closets outside main building, with covered passage-ways. For ventilation, 3,000 cubic feet of fresh air per hour, or fifty per minute for each scholar. The local newspapers advertise for proposals, etc.

Saugus. — A two-story wooden building has been erected on Essex Street, West Saugus. It is thoroughly built, heated by jacketed stoves, and provided with the "Red Rock" system of ventilation.

Topsfield. — The Centre school building in this town has been recently remodelled, and arrangements made for heating by water. Ventilating flues have been placed, leading from the school-rooms.

Gloucester. — A new high school-house has been built, and dedicated to educational purposes. It is of brick, two stories in height, and located on Dale Avenue. The Smead & Northcote of heating and ventilating has been adopted.

In the eastern section of Essex County there are seventy-five one-room school buildings, and fifty-five two-room buildings, of wood, all heated by stoves. These rooms, so heated, with a comparatively limited space, become more or less vitiated, and are open to the criticism applied to the larger school buildings, as to their unhealthy condition. A simple remedy proposed, is to adopt the old-time fireplace with a jacketed stove, even if stoves for warming are continued, to be used more or less, as required, as a method of ventilation in carrying off the foul air.

Impurities of Air, and the Effects.

It has been seen by what has already been shown, what are the defects of the school buildings, in heating and ventilation; how they have been remedied by improved methods; what are some of the causes of ill health of pupils and teachers; what science has shown in the composition of the air; and it only remains to be considered in what manner diseases are communicated through the impurities in the tainted air of the school-room.

No one can study the causes of disease without being convinced of the infinite importance of pure air to the preservation of health. "This general truth," writes a well-known medical writer in the report of the State Board of Health for 1870, "meets us at every turn. In the case of air spoiled by respiration, the reason is obvious enough to every one who understands the changes which take place in breathing; certainly in so far as the interchange of oxygen and carbonic acid are concerned. In other cases, as when the air seems to be the vehicle for the transfer of the hidden poison of the zymotic diseases, it is, as yet, obscure. In a study of the causes of disease, it is impossible to ignore it, however anxious we may be to keep within the strict bounds of scientific truth. In some way, the organic matter in air seems either to be, or to contain, the agent by which certain changes are impressed upon the blood in the lungs, which become the approximate cause of the phenomena of measles, scarlet-fever, typhoid fever and diphtheria. Whether this organic matter is waste tissue, which has once had life and has now undergone some metamorphosis incident to decay; or whether it be a living organism, a seed, a germ, a spore, or a vital radicle of any sort, — no one who thinks he knows can prove his knowledge. The search for this foe to our health is keen. The chemists, the microscopists, the natural

philosophers, are all aiding in the study of its origin, its character, and the means of separating it from the air which all believe conveys it. It has become, through the popular teachings of Professors Tyndall and Huxley, a subject of general discussion. It should, however, never be forgotten that it is to the unobtrusive labors of men devoted to science, like Dr. R. Angus Smith of England, — labors pursued unremittingly for over a quarter of a century, and modestly published in scientific reports, — that we know all, or nearly all, which is available on this obscure subject. The eloquent men who have interpreted the facts of Professors Smith, Pasteur, Beale and Sanderson, to the general public in a way to arrest the attention of the busy world, have in this respect done good service.

" In the year 1870 a careful note was made of the proportion of carbonic acid contained in the air of enclosed places of various sorts, and also of the outer air at different seasons of the year. This line of research has been continued up to the present time ; and, with the aid of chemists and microscopists, has determined, beyond a reasonable doubt, the amount of organic matter which the air may hold under various circumstances, and has taught something of its nature.

" Although carbonic acid is now generally regarded as a poisonous gas, it is rather as an obstructor of respiration, and, therefore, impeding all vital processes. Its amount in crowded and ill-ventilated rooms is a tolerably correct measure of the degree of impurity there present, and is specially worthy of observation as an index of the proportion of dangerous material coming from the waste of the body, with which, under such circumstances, it is always associated. The amount of carbonic acid found in the fresh outer air will furnish a standard of the quality of the normal air in the vicinity of Boston, and will lead to a better knowledge of some of the peculiarities of the climate of Massachusetts, in comparison with that of other States and countries."

In illustration of the value of the determination of very small amounts of impurity in air, we quote the following remarks of Prof. R. Angus Smith, from a paper on " Chemical Climatology," published in the " Scottish Meteorological Journal " of January, 1870. He writes : —

Some people will probably inquire why we should give so much attention to such minute quantities, — between 20.980 and 20 999 grains of oxygen, — thinking these small differences can in no way affect us. A little more or less oxygen might not affect us ; but, supposing its place occupied by a hurtful and dangerous matter, we must not look on the amount as too small. Subtracting 0.980 from 0.999, we have a difference of .190 in a million. In a gallon of water there are 70,000 grains : let

us put into it an impurity at the rate of .190 in a million, and it amounts to 13.3 grains in a gallon. This amount would be considered enormous, if it consisted of putrefying matter, or any organic dangerous matter, usually found in water. But we drink only a comparatively small quantity of water, and the whole thirteen grains would not be swallowed in a day; whereas, we take into our lungs from one to two thousand gallons of air daily. The detection of impurities in air is, therefore, of the utmost importance, and it is only by the finest methods that they can be ascertained in small quantities of air, even when present in such quantity as to prove deleterious to health. If, by inhalation, we took up at the rate of thirteen grains of unwholesome matter impregnated with the spores and germs or hidden poison of the zymotic diseases, half of one grain per hour, we need not be surprised if it hurt or ruined us. Such an amount is an enormous dose of some poisons, and yet this is not above .002 part of a grain at every inhalation. It is marvellous what small quantities may affect us, even when by repeated action they do not cumulate as certain poisons do.

Dust and Disease.

The question of dust as the media and transmission of disease has been the subject of the investigation of microscopists, and the results have been of an interesting character. The following extract, from a letter written by Mr. Chas. Stodder of Boston, an accomplished microscopist, will show that there are objects in the air too minute for identification: —

My first experiment was made with filtered soft water, which to the eye appeared perfectly clear, and free from foreign matter. In this, I found such objects as will be hereafter mentioned. The substances detained by the water are probably nearly all the larger particles, and representations in kind, if not in quantity, of those found floating in the atmosphere. We found especially scaly particles of apparently organic origin, and numerous minute, translucent, spherical or granular bodies, which some scientists call germs. A little of this water was evaporated on a glass slide, and examined with the microscope. It had left a deposit of the same scaly and spherical particles. My object in the use of water was, that if spores, germs or eggs, were found, their development and growth might be watched, and, if possible, their nature might be ascertained, that they really were spores, germs, etc., — believing, as I do, that these particles of matter have been taken for organisms. Other modes of collecting the dust of the atmosphere are by taking the deposited dust of rooms, or by causing a current of air to flow against a surface of glass smeared with glycerine, when a portion of the floating particles will be caught by the viscid surface. In these methods, we can judge of the nature of the dust only by its present appearance; there will be no growth. Both of these methods I have tried. My observations have been entirely on the air in a room. I have Tolles' microscope, with object glasses of unsurpassed excellence, magnifying from 250 to 1,200 diameters. In the dust collected I found scales resembling dead epithelial scales; filaments of cotton, wool, or flax

woody fibres, all abundant; some pollen grains, scales of moths' wings, hairs, and parts of insects; starch grains, grains of inorganic matter, sand, etc. Such things are reported by all observers; besides, some of them report immense numbers of spores and germs.

The microscope has revealed various organisms which are the originators of disease, known as bacilla and microbes. "The bacillus, when viewed under a powerful microscope of 1,000 diameters magnifying power, appears as an egg-shaped little bag, not more than $\frac{1}{75000}$ of an inch long. The rancid odor of animal or vegetable substances is due to the operations of these minute organisms. It is assumed that nine-tenths of all diseases, if not all, are caused by specific low organisms. All of these germs of diseases require moisture for their propagation and growth. Dryness, merely, it is believed, will not kill them; and, after an indefinite period of time, such organisms as produce plague, cholera and other contagious diseases, may be revivified and produce all the former destruction of life." In view of the dangers attendant upon the spread of contagious diseases, the legislative act of 1885 was passed, preventing the attendance at schools of pupils sick of small pox, diphtheria and scarlet-fever.

A Comparison of Pure Air Supply.

In the legislation of the past years, on account of a general demand for better ventilation of factory buildings, in regard to the health of the operatives, various measures were enacted of a beneficial character. It may surprise many persons, as it has the writer of this report, who had a fair share in that legislation, to learn that the average factory buildings in Essex County are far better ventilated and more conducive to health than are most of the school buildings. The tabulated statement appended will show a comparison of the floor space and the purity of air to each operative, with that to each scholar in ten school-houses named.

Name of Mill, Etc.	Department.	Average Number Employees.	Cubic Feet of Room.	Tota. Cubic Feet.	Cubic Feet per Operative.	Floor Space per Operative Cubic feet *	Air Test by Weight Amount in 10,000 Volumes.
Naumkeag Steam Cotton Co., Salem,	Ring spinning room,	45	180×91×14½	245,026	5,400	2,700	6.0
Naumkeag Steam Cotton Co., Salem,	Lower weave room,	65	189×91×12½	214,987	4,850	2,425	5.3
Arlington Woolen Mills, Lawrence,	Top spinning room,	195	269×96×13	497,664	2,560	1,275	9.1

Temperature 80 degrees Fahrenheit. Average, 2,133 cubic feet floor space per operative. Fresh air per capita per minute, 30 cubic feet.

* Reduced one-half by machinery.

School-houses.	Cubic Feet per Pupil.	Date.	Air Test by Wolpert.
Browne, ...	310	May, June and July, 1889,	20 in 10,000 volumes.
Endicott, ...	250	May, June and July, 1889,	16 in 10,000 volumes.
Pickman, ...	300	May, June and July, 1889,	25 in 10,000 volumes.
Lincoln, ...	225	May, June and July, 1889,	20 in 10,000 volumes.
Upham, ...	240	May, June and July, 1889,	20 in 10,000 volumes.
Prescott, ...	250	May, June and July, 1889,	10 in 10,000 volumes.
Carleton, ...	310	May, June and July, 1889,	16 in 10,000 volumes.
Lynde, ...	265	May, June and July, 1889,	20 in 10,000 volumes.
Bertram, ...	290	May, June and July, 1889,	29 in 10,000 volumes.
High, ...	–	May, June and July, 1889,	33 in 10,000 volumes.
Average, ...	270	. . . . .	21 in 10,000 volumes.

Average amount fresh air per pupil per minute, 3.51 cubic feet.

Thus it will be seen that the proportion of floor space furnished to each person in the factory is at least eight times that to each pupil in the above-named school-rooms, with the fresh-air supply totally inadequate. When there was so much concern for the factory operative, which was very proper and commendable, is it not time that justice should be fully done to the school children? As another necessary feature in legislation, alike beneficial to children and the community, the law requires that the children of school age shall not be employed in factories more than a specified number of hours, and compels them to attend school long enough to fit them to become intelligent citizens. What a reflection on legislation must it be to take children from the factories, where they are endeavoring to earn the means of support, and force them by law into a school atmosphere many times less pure!

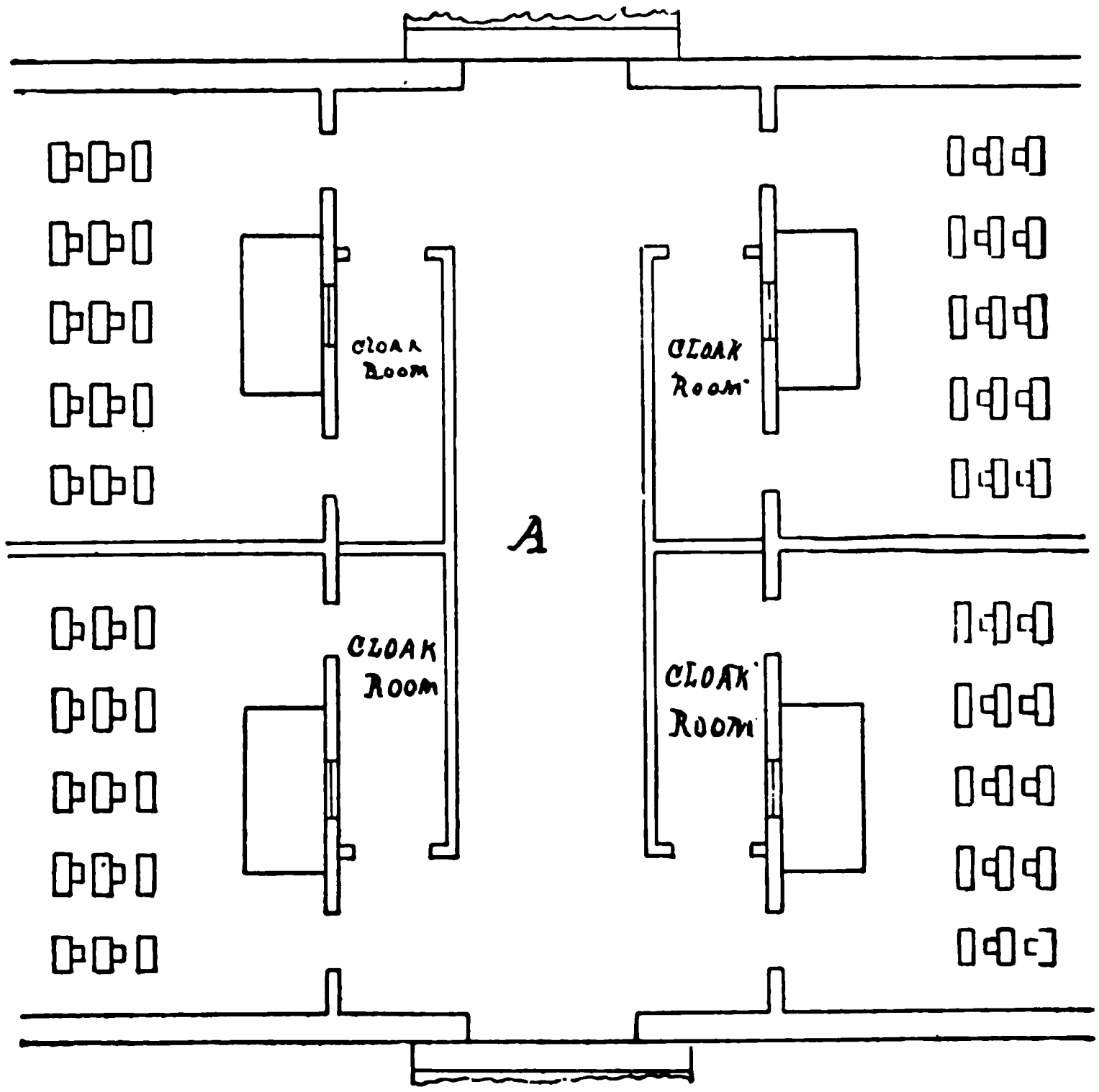
Janitors and Engineers.

The selection of a janitor for our school buildings, under an improved system of heating and ventilation, is to be a more important matter for consideration than in the past. The janitor is to be not a mere drudge or common laborer, but in some sense a man of education, in concerns which affect the welfare of the children, relative to their future health and that of the community. To have the school building well heated and ventilated, he should not merely make up and set his fires and apparatus in order, and go off and leave them for any considerable time, as in some instances, taking care of two or more school-houses; but he should be present during sessions, to see that everything is safe and in good working order. His position should be little less than that of an engineer; and the consequence of his neglect may be much more disastrous than that of a careless or bungling engineer. In the

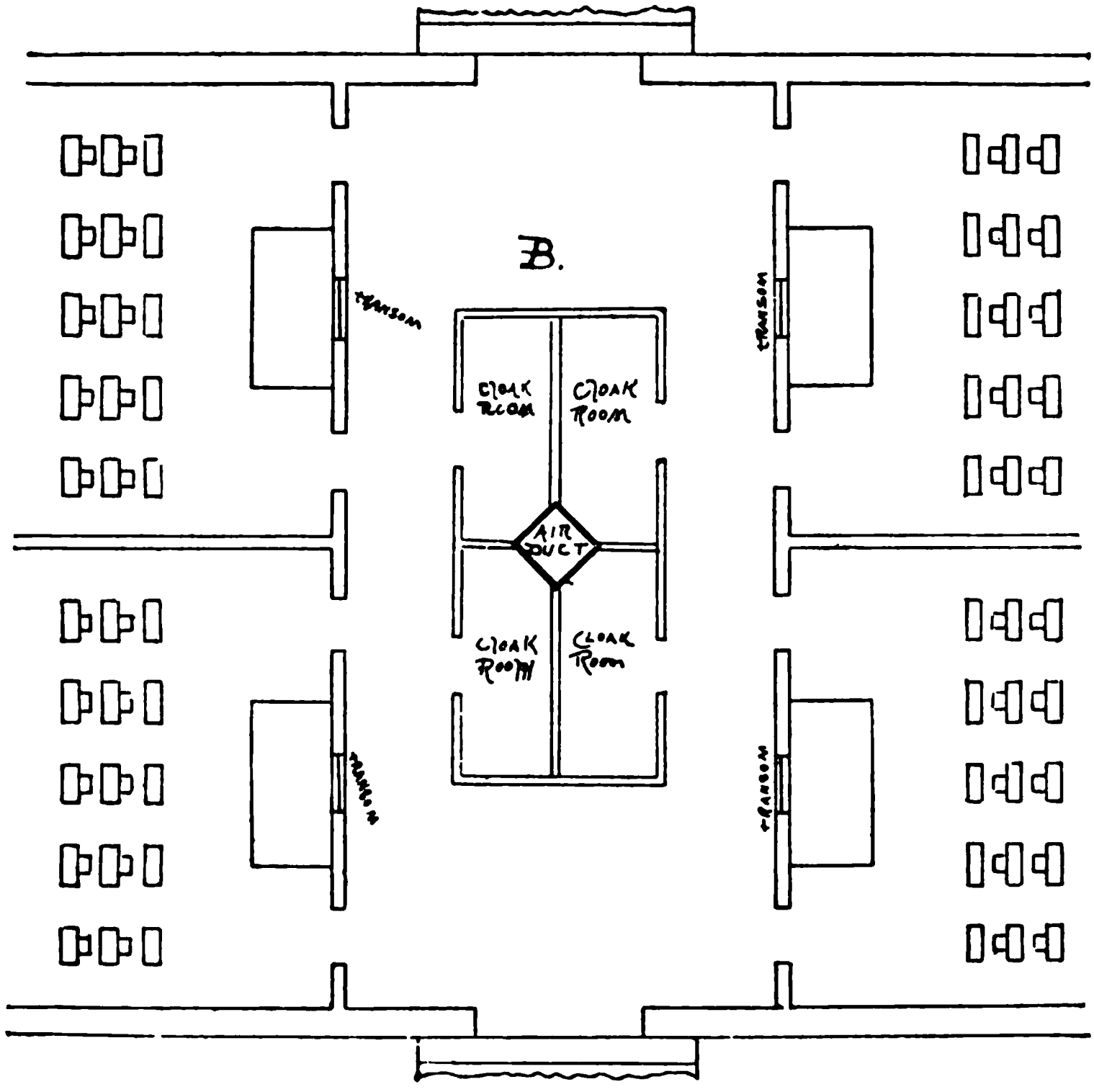
faithful discharge of his duties he will find much to do, especially in the large school buildings. In the experience of every housekeeper, it is found that there may be a great saving of fuel by a constant attention and care of fires; so, in the large consumption required in school buildings, the janitor may save an equivalent equal to the necessary increase of salary where more ability and time are among the requisites of the position. The additional duties imposed upon him cannot be expected to be performed by one who is anxious to lighten his labors and go about some other business, nor by one who takes no other interest in his business than merely to earn his salary. One of the duties, as specified in a rule of a school committee, is, "that the janitor shall inspect all the apartments and out-buildings, with their surroundings, at least once daily, and he shall be held responsible for their cleanliness at all times; likewise, he shall, in conjunction with the teacher, investigate all abuses of sanitary accommodations, and report the same to the committee." It is believed that a janitor should be able to pass an examination as to his fitness to manage the improved appliances in heating and ventilation. An excellent method has recently been adopted in the town of Peabody, under the direction of the chairman of the school committee. A meeting was recently held of all the school teachers in that town, with the janitors and the school committee, in which the subject of ventilation was thoroughly discussed, and it was believed with good results.

Improved Method of Locating Dressing Rooms.

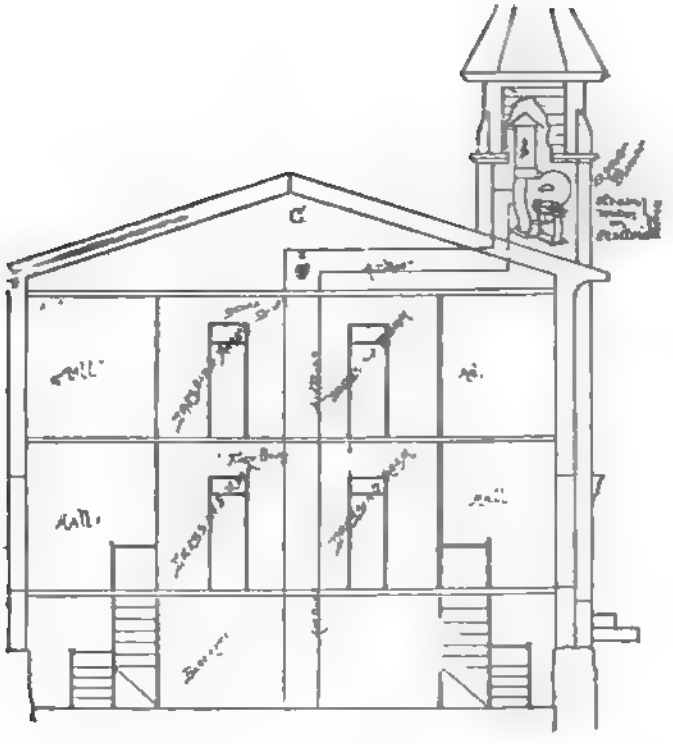
In the place of the present arrangement of dressing rooms in school buildings, for reasons which will be obvious, it is suggested that another method of locating such rooms be adopted. The cloak rooms, in a building with four or more rooms, should be massed together at each story, and located near the middle of hallways, with substantial walls and partitions separating each room from the other, and each having a separate entrance nearly opposite to the entrance to the school-room, as on the plans annexed. In the upper corner, connecting the several rooms, a common air duct, radiating from each, should run to the top of the building, as a method of ventilation, to be blown off in such a manner as may be found most expedient. In wet or damp weather, when the outer clothing of the children is hung up, the odor necessarily arising in the drying process, by means of some vaporizing disinfectant, may be carried off through a wire duct, leaving the clothing in a better condition than in many cases at home, and to that extent lessening the means of contagion and of any other disagreeable effect.



PRESENT LOCATION OF CLOAK ROOMS IN SCHOOL BUILDINGS.



LOCATION OF CLOAK ROOMS AS RECOMMENDED.



SECTIONAL VIEW OF AIR DUCT LEADING THROUGH CLOAK ROOMS TO TOWER AND BLOWER.

The Germ Theory of Disease.

"Many of the most distinguished pathologists of the present day have in fact declared themselves convinced of the substantial truth of the theory," writes Prof. F. H. P. Barnard, president of Columbia College, "that ascribes disease in general, and infectious diseases in particular, to the introduction into living organisms of minute parasitic forms of life, and their subsequent multiplication, to the obstruction of the vital functions. This theory also assumes a ferment to be an organized substance, in a certain state of decay, which possesses the property of exciting the same decay in other organic substances with which it is in contact. Applying this theory to disease, it supposes that infection is communicated by the instrumentality of particles, spores, or germs, thrown from the person diseased, and borne by the air to other persons in full health, in whom they excite, probably by contact with the membraneous linings of the lungs, or by absorption through the pores of the skin, the same diseased condition which exists in the patient. The widely prevalent and frequently fatal malady known as diphtheria has been proved by the recent investigations of Cohn, Oertel, Eberth, Nassilaff, and others, to proceed from a penetration of the tissues by particular forms of bacteria, — a species which appear in the membranes which form in the mouth and fauces. The disease is readily communicated by inoculation. It is also conveyed by clothing, books, letters and merchandise. The causes of these epidemics, whatever they may be, will generally be found in the surrounding conditions. In this view of the subject the business of sanitary scientists is to discover the nature of all deleterious conditions tending to invite these diseases, and to prevent their occurrence. The remedy and prevention should be a fresh-air supply, pure water, wholesome food, thorough drainage, a rigidly enforced cleanliness, and a prompt and complete disinfection of every spot where pestilence may lift its head."

Fresh-air Supply and Foul-air Removal.

The question has undoubtedly arisen almost everywhere of late years, Why this extraordinary condemnation of public buildings, as lacking the essentials for proper ventilation; and how does it come about that discoveries have been made which were unknown in other days? This is answered by the fact that demands have been made not only for more elegant and expensive houses, but that they shall be made, so far as possible, air tight, or admitting into them no more air than can be helped. The nearer air tight

they can be made by construction, double windows, door strips, and no fire places, as though air was not essential to life, except in being warmed through a register, and the air not always the purest in coming through a basement or back yard, the more the inmates of dwellings and those who frequent public places of resort have suffered. It is only in recent years that the discovery has been made that the nearer we get back to the more natural ventilation of former times, the better it will be for the public health, and the future well-being of the children of the public schools. The skill of sanitary experts in such matters is rapidly concentrating on plans not essentially differing, but which should be credited to the late A. C. Martin, Esq., C. E., Boston, who did not live long enough to see his particular plans in successful operation. One of the first, if not the earliest, plans of Mr. Martin was placed in the Bowditch school building in Salem. The plans for heating and ventilating may have been fully adopted; but, either from negligence or the saving of labor by the janitor, or other persons whose duties required that the apparatus should be kept in proper order, much of it, it has been said, became disused, and its best qualities were not fully tested. It is well known that opposition was made on account of the expense; and the indications are, that those plans, or substantially those, will yet be adopted in all of the school buildings. Salem might have had the honor of having the most approved well heated and ventilated school building in the State. A paper by the late Mr. Martin, written about twenty years ago, was published in the report of the State Board of Health for 1871. It is not positively known whether his plans and suggestions were carried out in any large school building elsewhere, and it is more than probable that the question of expense, rather than of comfort and health, were the objections to their adoption at that time, as they will be at the present.

The Ventilation of School Buildings.

By A. C. Martin, *Architect, Boston.*

The importance of thoroughly ventilating school buildings is acknowledged by everybody, while the number of persons who have considered the amount of ventilation required to keep a room in a wholesome condition, and the best way to produce the necessary change of air, is comparatively small. All know that the condition of the air in most school-rooms an hour after the session has commenced is very bad, so bad as to induce a morbid condition of the system, impairing the mental vigor of both teachers and scholars. The cause of the trouble is commonly stated to be the presence of carbonic acid in the air which we inhale. When first thrown off from the lungs, it is warmer than the

surrounding air, and, therefore, rises to the upper half of the room; consequently, in the popular idea, the bad air is always at the top of the room. According to the same theory, it is only necessary to make a hole somewhere in or near the ceiling, to let it off, and thus the room is properly ventilated. This theory of ventilation, it should be noticed, makes no provision whatever for a supply of fresh air in those school-rooms which are warmed by stoves. In cases where furnaces are used, they are commonly regarded as sources merely of heat, — seldom as the means of a supply of fresh air. Registers are placed somewhere in the floor; but their size and disposition are left to the convenience or to the discretion of the furnace dealer, whose sole aim is to furnish heat, not air. True, some air must make its way through the hot-air pipes, but as soon as the temperature of the room is so high as to be too warm for comfort, the register is closed, thus shutting off entirely any supply of fresh air except what may creep in through the crevices around the doors and windows. If further relief from heat or close air becomes necessary, the windows are let down a little from the top. The result of this is, that the cold air rushes in and fills the bottom of the room, causing dangerous draughts for those who sit near the windows and cold feet for everybody. If we examine this popular notion concerning the theory and practice of ventilation, we shall find that its explanation of the cause of the difficulty falls as far short of stating the whole case, as the remedy proposed fails to accomplish the desired end. As we have seen, the carbonic acid gas exhaled from the lungs is looked upon as the principal evil. Its presence is, indeed, clearly recognized, and the amount given off by the lungs has been determined to be about four per cent. of the air exhaled. [The difference in quantity is caused by varying circumstances. The amount thrown off is least during the night and greatest during the day. It would seem that the maximum and minimum amounts depend upon the state of digestion, or the degree of physical exertion.] But, so far from its being the principal evil in vitiated air, it is proved by experiment that a still larger proportion of carbonic acid than is contained in the close air of an unventilated room may be mixed mechanically with ordinary air, and breathed without inconvenience. The workmen engaged in the manufacture of soda water do not experience any ill effects from breathing large quantities of it.

We must, then, seek farther for sufficient causes for the foul condition of the air in an occupied room. We shall discover in it not only this deleterious acid, but in still greater proportion the watery vapor and the animal matter thrown off by both lungs and skin. The amount of watery vapor given off by the lungs and skin has been variously estimated as from twenty to forty ounces in twenty-four hours, or about six to twelve grains (Troy) per minute. This vapor contains animal matter, which seems to putrefy almost immediately after being thrown into the air. It is the source of the vile odor in ill-ventilated rooms, and, in its effects on the health, is far more dangerous than carbonic acid gas, which is now generally considered as acting rather as an obstructor of respiration than as a positive poison. No surer or more exact test than

a well-educated nose has, as yet, been discovered to measure the amount of vitiated animal matter that is thrown into the air; but of its source we can form some opinion.

The immediate emanations of the body itself we have just mentioned. All clothing, carpets and furniture are adding constantly to the air the minute particles worn off by friction. A beam of sunlight thrown across the best-kept room marks its way on the dust in the air, and all remember what we have seen floating in the air of school-rooms Still another element of evil must be counted in the clothing of children of the poorer classes, which is worn, and possibly kept in homes that have seldom known an airing. It is easy to detect, in some school-rooms, the odors resulting from the different occupations of the children's parents, mingled with the scent from the frying of the family doughnuts, or the smoke of the paternal tobacco pipe. What science hints of the germs of disease in the air about us might startle the most careless; but such details are unnecessary when we are discussing ventilation, not for cases where great crowds of people are assembled, or where unusual causes create foul air, as in the sick wards of a hospital, but in relation to the far simpler question, how we can best warm and ventilate our school-rooms.

One general consideration remains to be added to this brief statement of the elements of evil in foul air. The air we breathe is exhausted of its life-giving power after a few inhalations. Deprived of its normal proportion of oxygen, it is rendered unfit for its proper uses. Again, the carbonic acid, the watery vapor, the animal matter and the minute dust, are soon diffused throughout the room. The question where the air is worst, may be taken up later; but it must be manifest, from what has been said, that the entire air of a close room soon becomes vitiated in every part. Still farther, we are considering rooms in which the children daily spend five or six hours, and the teacher often seven or eight. The children are at an age when respiration is most active, and when nature demands an ample supply of air of the purest quality. We are, then, forced to conclude, from the nature of the evil, and from the imperative necessity of its entire removal, that no remedy can be successful, which does not ensure a full and complete renewal of the air in the room as often as it becomes foul or dead. Nothing less than an absolute change of the whole volume of air can accomplish the object. How often this should be done within a given time must depend upon the size of the room, and the number and age of the persons occupying it. Authorities differ as to the amount of air to be supplied, to ensure a proper ventilation; but it is generally admitted that it should not be less than thirty cubic feet per minute, for each person. It may be that children require as much as adults, as they breathe faster. The actual amount of air space in the room must also be considered. As an illustration, we will take an ordinary school-room for fifty-six scholars. Such rooms in Massachusetts are about 28 by 32 by 12, containing 10,752 cubic feet, or 192 cubic feet to each scholar. If we assume 20 cubic feet per minute as the minimum supply for each scholar, it will require about 1,200 cubic feet of fresh warm air per minute for the

school-room, or about 78,000 cubic feet per hour. This supply would renew the whole volume of air in the room every three to four minutes in the hour. This estimate would prove in practice the proper one in the school-room designated, which is not large enough for so many occupants. It should contain at least 220 cubic feet of air space for each individual.

We have now to consider the means of obtaining this indispensable fresh air. If the mere supply of warm air would ventilate an occupied room, we should have had the question of ventilation, for the cold season at least, settled thoroughly during the reign of hot-air furnaces. For twenty years preceding the year 1870, most school buildings put up in the cities and larger towns contained neither grates nor fireplaces; for the furnace was considered the best means of heating and ventilating rooms, and even now dealers specially advertise their wares as ventilating furnaces.

It is obvious that no means of supplying air can accomplish ventilation which does not also provide for the removal of the old and foul air. Any person accustomed to an open fire in a room partially heated by a furnace feels at once the difference in the quality of the air, on going into the room of his neighbor, who depends solely upon the hot-air register. The open chimney in the one case is constantly drawing off the bad air. In the other it escapes slowly, if at all, through crevices or by the occasional opening of the door. It not unfrequently happens that the hot air ceases to enter through the register for the want of an outlet, and the door must be opened in order to start it. Our object, then, should be to seek such means of renewal and supply as shall cause and maintain a perfect balance between the incoming and outgoing air. The old-fashioned fireplace is the first suggestion of the idea. The popular practice we have before mentioned was supposed to be an advance of improvement. It made a hole through the ceiling to let out the bad air, opened the furnace registers, and considered the work done. On this principle, no proper diffusion of fresh air could be obtained. A steady current would soon be established between the register and the ventilator, leaving dead air eddying up and down in the lower part of the room, which may be breathed over and over again, before it is drawn into the main current and taken out of the room. When a running stream passes by a cove of comparatively still water, a counter-current is almost always seen setting up along the shore. When the air from the register is heated in the winter, the difficulty is increased, as the current is accelerated, and the cold air remains nearly undisturbed, or settles down disagreeably upon the head and shoulders. A person sitting in a church near one of the large hot-air registers will not unfrequently be annoyed by very perceptible counter-currents of cold air which set downward beside the ascending hot stream. To avoid these difficulties, and secure the proper diffusion of the air, are the main questions in all discussions of the subject.

The systems proposed seem to have divided themselves into two great classes, by taking up the subject at its opposite ends: one looking to the outgoing of the air, the other to its incoming; though both have as

a vacuum and the portion inclosed is the air. One system consists in providing the air entering it to make its way out through ducts provided for the purpose. It accomplishes this by blowers or fans which press the air into the room. It is the plenum method, and may be further characterized as the mechanical. It is expensive, and requires great mechanical care in working. Its success is sometimes doubtful. In these respects it need not further be considered for school-house ventilation. The other system is directed to the withdrawal of the foul air, and this may be accomplished by means of natural laws, requiring no machinery other than simple flues. It is the vacuum method. It avails itself of the natural tendency of warm air to rise, which is the result of the law of the dilation of gases. A volume of air heated from the freezing point to the boiling point of water, barometer at 30 inches, expands about $\frac{1}{3}$ of its volume, or $\frac{1}{480}$ for each degree F. (Gay Lussac's law.) If the temperature of the air in the school-room is 20 degrees higher than that of the exterior air, its volume has been increased $\frac{1}{480} \times 20 = \frac{1}{24}$, or $\frac{1}{24}$ consequently it is lighter than the exterior air, and tends to rise. If the vertical duct or shaft leading directly upward and out of the building, be connected with such a room, a current of air will at once set up through it, subject to conditions hereafter stated, unless it happens that the shaft or duct be cooled down to the exterior temperature, by contact with the outer air. If necessary, heat can be applied to the lower end of the shaft, or the smoke pipe from the furnace may be carried up through the ducts, to increase its draught. The necessary supply of an equal amount of fresh air will be drawn into the room, either through the hot-air pipes of the furnace or some special ducts prepared for the purpose: or, failing in these, it works its way in about the doors and windows.

It will be readily understood, from what we have before said, that the mere hap-hazard arrangement of the register in the floor and the hole in the ceiling will not answer. Good ventilation consists in the proper distribution of the ducts for the outgoing and the incoming air, and in their proper relation and correspondence with each other, so as to secure the perfect removal of the bad air and the thorough diffusion of the new.

The power of a vertical duct to draw the air from a room results from the velocity of the flow of air through it. This velocity depends: 1. Upon the difference between the external and internal temperature. 2. Upon the height of the duct. 3. Upon the resistance or friction; that is to say, upon the straightness and smoothness of the ducts. 4. Upon the sufficiency of the supply of air to replace that which is drawn from the room. The amount evacuated by such a duct in a given time depends on the same four conditions, and also upon the area of a cross section of a duct; that is, upon its size. The following general equations express the relations, in which V is the mean velocity of the air in the duct: K is a numeral co-efficient, dependent upon the form, disposition and friction of the duct, and is a constant for each duct; T is the interior temperature; H is height of duct; T′ is the exterior temperature; A is the area of a cross section of the duct; Q is the volume of air passing in one second.

1. V=K V (T-T') H.
2. Q K A V (T-T') H.

By an inspection of the above equations, it will be seen that, to increase the velocity of the flow of the air through a vertical duct, and, consequently the drawing power of the duct, and also the amount of air evacuated in a given time, we must either increase its height, or the excess of the interior temperature above the exterior. By the interior temperature is meant that of the air in the duct, and this is practically the same as that of the room, unless additional heat is applied to the duct.

From the above principles it follows that when the height and disposition of the vertical ducts have been determined by the character of the building, their size should be estimated for summer ventilation, when there is the least difference of temperature; and also that the ducts for the upper parts of a building should be made larger than those for the rooms below, if they are required to evacuate the same amount of air. The same reasoning applies to hot-air pipes. They should be larger in area or cross section for the rooms below than for those above; because they are shorter, and, consequently, the velocity of the air would be less than in the longer pipes for the rooms above. The question next arises as to the way of adapting the means to the end. Shall the vertical ducts lead out from the top or the bottom of the room? Shall the fresh air be taken in at the floor or the ceiling? Which will work to the best advantage, — an upward or a downward movement in the air of the room?

It might seem, at first, a matter of small consequence where the air is taken out, since it is safe to say it would become bad in every part of a room; but the importance of the point will appear as we proceed. At first sight, it would seem easier to ventilate a room by the general upward movement of the air, because its tendency, when first exhaled from the lungs, is to rise. A cubic foot of air at 60 degrees F., dew point 40 degrees, barometer 30 inches, will weigh 534 27 grains. A cubic foot of expired air, at 95 degrees F., dew point 85 degrees, containing 12 78 grains of vapor, and say 4 per cent. of carbonic acid, will weigh only 494 12 grains, or 7 5 per cent less. This tendency is further increased by the heat given out from the body, which warms the air in immediate contact with it, so as to cause upward motion enough to be measured by the anemometer. Nevertheless, this upward movement, even when aided by the flow of hot air from the furnace, fails to secure a proper diffusion of the fresh air. We have shown, in discussing the claims of the furnaces as ventilators, how quickly a steady current will be formed between the inlet and the outlet, leaving the bad air almost unmoved, and only slowly and partially drawn into the current. If the attempt be made to diffuse the air by taking it in at several different places, it is apt to cause disagreeable draughts of warm air upon persons near the registers. Another objection will be found in the difficulty of heating a room ventilated in this way, because the hot air is drawn off so rapidly, while the great mass of the cold air remains at the bottom of the room,

thus making a difference of temperature between the air of the floor of the room and that at the level of the head, amounting often to 6 or 7 degrees F. If, on the other hand, we connect the duct withdrawing the air with the lower part of the room, we shall have, in the first place, an advantage as obvious as it is important, in the removal of the foul air as nearly as possible at its source. By that law of the diffusion of gases, by which aeriform bodies diffuse themselves through each other's masses to an unlimited extent the carbonic acid in expired air would undoubtedly be diffused throughout the whole room. The aqueous vapor, loaded with animal matter, must also contaminate the whole atmosphere; so that, although after a full school-room has been shut up an hour it would be hard to say where the air in it is the worst, it is plain that the evil can be reached at its source, and should be removed at once before it spreads through the whole apartment. By using the downward movement, the dust also, no small part of the trouble, will be drawn off immediately, and not scattered everywhere. The emanations of the skin and clothing are got rid of far sooner, and the clean and tidy children will not suffer so much from their less tidy neighbors.

The good accomplished by the open fireplace is precisely on this principle of taking the air out of the bottom of the room. The whole subject may be well illustrated by the case of a reservoir or pond, where some special cause of defilement exists at one end. If, instead of drawing or pumping out the foul water as nearly at the spot as possible, an engineer should undertake to draw it off through the clean water, allowing it to diffuse itself all the way, what folly it would seem. The foul air should be taken out by openings so distributed around the bottom of the room that the currents of withdrawal shall affect all parts of it, while the fresh air should be introduced at the top. If it comes in at a temperature lower than that of the room, it should be distributed as much as possible, and directed upward and along the ceiling, so as not fall directly down upon the heads of those below. If the air be heated and drawn in by a constant current, it will diffuse itself under the whole ceiling; and, arranging itself in layers, the warmest at the top, will gradually settle down through the room. The diffusion would be nearly or quite perfect, but for the unequal cooling of the air by contact with the outer walls. This inequality would be perceptible, however, only in extreme cases; and the heating of the room would be accomplished without draughts of any sort. For, by taking the air out from the bottom of the room at a number of places, the velocity of the current of withdrawal through the registers can be easily made so small as not to be perceived; a current of air of the same temperature as the rest of the room is not unpleasant, unless quite rapid; while a current of a higher or a lower temperature is disagreeable, though its velocity be no greater than the former.

So far we have considered the question in its simplest form; viz., a vertical duct leading directly from the room into the open air. This would be impracticable in a large building; but the principle can be applied with equal success to any number or arrangement of rooms. The ducts should be made to connect with the bottom of a central shaft,

or chimney, of size and height sufficient to create a strong drawing power in all of them. The smoke pipe of the furnace passing up through the chimney would aid the draught, or a fire can be built in a grate prepared for the purpose, near the bottom. In this way, every part of a large school building, rooms, halls, and sanitary apartments, can be effectually ventilated. This method has a strong claim to favor from the facility with which the air of a room may be heated to a certain given point. To maintain an even temperature when the heat from the lungs and body is constantly thrown into the room, is one of the chief difficulties in the problem of good ventilation.

Many large buildings are warmed with air heated by passing over two or three coils of steam pipe. In such cases too great heat could easily be avoided by the use of valves to shut off the steam from one or more of the coils of pipe, leaving the fresh air to flow unchecked. This plan avoids entirely the fault of shutting the register in a school-room, thus excluding the fresh air as well as the heat.

If the common furnace is used, great care should be taken to manage the fire so as not to throw the dangerous gases from hard coal into the air chamber, whence they will inevitably be carried into every room. The valve in the smoke pipe often causes much harm in this way, when it is used to check the draught; the draught itself should not be checked too soon, or too much, lest the coal be burned without giving out its proper amount of heat, and the poisonous carbonic oxide be evolved from it. Mistaken economy is often the unsuspected cause of the trouble from gas in houses and public buildings.

Can we plead too strongly for a thoughtful consideration of this subject? Fresh air is not a luxury, not even an essential comfort, but an absolute necessity for the children. The duty of providing it is imperative. The cost is to be counted a trifle, in proportion to the good to be gained. We build our walls tight and strong, to keep out the cold, and then complain that we must pay money for fresh air, — the most bountiful gift of nature. Let the school-houses at least be planned and built in the first instance with free channels for the air to come and go; then the item of ventilation will make small show in the construction accounts. When the blessing of ventilation is fully understood, the most grumbling of tax payers will admit that money spent for it was never better invested. Then shall it no longer be said that teaching is more wearing than any other profession requiring the same actual labor, but teachers and scholars shall work without over-fatigue or listlessness in their fresh, sweet school-rooms.

Inspector Dyson reports: —

Sir: — In reply to your request for a report from the Middle District, I beg leave to submit the following: —

The provisions of chapter 426 of the Acts of 1888, relative to the means of egress and escape from fire in certain buildings, in

all cases where I have issued orders for additional egress, have been cheerfully complied with.

Chapter 316 of the Acts of 1888, an act to regulate the construction of certain buildings, also the furnishing a copy of plans and such part of the specifications as desired, has in every instance been complied with; and there was but one case where the architect found fault with the provisions of the act. In at least two-thirds of the plans submitted changes were ordered either in construction, means of egress, fire stops or material used in stairways. I have found a number of cases where, against the wishes of the architect employed, the owners, in order either to gain more room or to save expense, have ordered buildings constructed with the intention of putting on outside fire escapes. In all such cases I have insisted on having sufficient means of egress provided by inside stairways.

Chapter 149 of the Acts of 1888, an act to provide proper ventilation and sanitary provisions in public buildings and schoolhouses, has taken more of my time and caused more friction than all of the other so-called inspection laws. Still, I must say the result gained in some of the cities and towns in the Middle District has fully repaid for the time spent; notably in the city of Worcester, and towns of Athol, Leominster and North Brookfield. The results of the work in these places I will give you later. In one of the largest towns in the district I visited the public schools, and later notified the chairman of the school committee that some means of ventilation should be provided for a number of the buildings, also that better sanitary provisions should be made. Later, at the request of the school committee, I again visited the schools in their company. While they admitted the necessity that something should be done, the claim was made that they had no funds to make the changes required. Early in August a special town meeting was called, to see if the town would appropriate the funds to make the required changes; and, judging from the report of said meeting, which was published in several of the papers throughout the district, the subject was well ventilated. The matter was referred to a special committee, to investigate and report at the next April town meeting; and to-day (November 21) I was informed by a member of that committee that they had not met yet. I also visited two of the schoolhouses which at my previous visits I considered the worst, — one of six rooms, with an average attendance of over three hundred (two of the rooms each with a membership of over sixty), the whole building ventilated by windows and doors only. The air [illegible]g with from three to five windows open, showed an

average of 14 parts of carbonic acid in 10,000. It is easy to imagine what it would be in cold, stormy weather, with all doors and windows closed, as I found them last winter at the other school of four rooms, with a membership of over two hundred. There is no provision for ventilation except by the windows and doors; the building is heated by three furnaces and one stove; the furnaces are located in the cellar, and all of the air used to heat the rooms is taken from the cellar floor. The cellar is used to store wood, coal, ashes, and the sweepings from the school-rooms. In the part of the cellar where the wood pile has been located for years, there is at least a cart-load of rotten rubbish, thoroughly soaked with surface water, which the janitor stated covers the cellar floor during severe rain storms. In the sanitary closets for the boys there are no urinals, and I found them, as I did last spring, in a disgusting and filthy condition. The teachers complained that they could not use the windows on one side of the school-room for ventilation, as the odor from the sanitary closets was very offensive. The above facts were found in two of the school buildings which, in town meeting last August, a leading medical practitioner said were well ventilated; that there had been more sickness among school children from too much ventilation than from too little; and that the requirements of the inspector were absurd. There is no doubt but what the action of this town has delayed the work of ventilation of school buildings in the district; but I think that public opinion will compel officials to take the matter in hand, more especially when they can examine and see the results gained in other places. The city of Worcester will, by the 1st of January, 1889, have no less than five distinct improved systems of heating and ventilation in practical operation.

Belmont Street School, Worcester, Mass. — Is a three-story and basement brick building, of eighteen rooms, with an average attendance of about eight hundred and seventy-five pupils. About a year ago there was considerable feeling expressed by the parents of the pupils, they claiming that their children repeatedly came home sick from school. Meetings were held, and a committee appointed to urge the city government to make certain changes, more especially in the sanitary closets, which were claimed to be imperfect. Experts were employed who finally decided that the trouble did not all exist in the closets, which were located in the basement, but that the building required ventilating. The matter was brought to the attention of the city government, which in June appropriated $20,000, to be used in heating, ventilating and

providing improved sanitary closets for three school buildings. The contract for this building was let to the School-house Ventilating and Warming Company of Troy, N. Y. The building was formerly heated by direct steam. This plant was left as it was, to use if needed in extreme cold weather, and a system of indirect steam heat provided, and an exhaust fan of 7 feet in diameter provided for drawing the vitated air from the eighteen school rooms and fourteen dressing rooms. All of these rooms were connected to one foul-air shaft, 8 feet 1 inch by 7 feet 9 inches. The sanitary closets were removed from the basement, and located in a one-story annex, ventilated by a small fan run in an independent shaft. A test was made, November 20, in the above building, with the following results: Weather, raining; temperature outside, 50 degrees; temperature near fan in foul-air shaft, 68 degrees; velocity at foot of shaft, 700, showing 41,300 feet of air moved per minute. The average temperature in the rooms was 70 degrees; amount of air removed, 1,335 feet per minute, an average of 29⅓ feet per pupil. The temperature of air entering room was 93 degrees; amount of warm air entering room per minute, 1,013 feet, or an average for each pupil of 22½ feet per minute. Average of tests made for carbonic acid, 6.1 in 10,000 parts. The temperature in the different parts of the rooms varied from one to two degrees. The apparatus is so constructed that teachers can regulate the temperature in the rooms to suit themselves; but the foul-air outlets cannot be closed by any one. So far the system has given satisfaction. The teachers are pleased with it, but it seems odd not to open windows or doors to ventilate the rooms.

Lamartine Street School, Worcester, Mass. — A three-story brick building, of twelve rooms, with an average attendance of about five hundred and fifty pupils. This building was heated by thirteen "Morning Glory" stoves; was ventilated by windows and doors. Last spring much complaint was made by parents and teachers as to its condition. In July a contract was made with the School-house Ventilating and Warming Company of Troy, N. Y., to heat, ventilate, and provide sanitary closets, which necessitated the remodelling of the inside of the building. The rooms are warmed by four furnaces, the warm air being carried to each room by brick ducts, and, after becoming vitiated, carried through brick ducts to the cellar, where it enters a large brick shaft running through the centre of building to the roof. This shaft is 5 feet by 6 feet 6 inches in diameter, and is heated at the bottom by a furnace. The sanitary closets are ventilated

through the smoke-stack. On November 19 a test was made in this building, with the following results: Weather, cloudy; temperature outside, 43 degrees; average temperature in rooms, 72 degrees; average temperature of air entering rooms, 100 degrees; average amount of air entering rooms, 1,548 feet per minute, or an average of $39\frac{8}{13}$ feet per pupil; temperature of air at outlet, 70 degrees; average amount of air removed each minute, 1,168 feet, or $29\frac{3}{39}$ per pupil, or the average amount of air supplied for each pupil per hour is 2,381 feet, and about 1,800 per hour removed by the foul-air shaft. The finest result gained by this system is shown in the sanitary closets, where a velocity is shown of over 600 feet per minute. The ventilation in this building continues twenty-four hours per day, or as long as the fires are going. The question might be asked, "Which is the best, — furnace heat, or steam with a fan which would usually run but six hours out of the twenty-four?" Average tests for carbonic acid, 6.5 in 10,000. Temperature varied from one to two and one-half degrees in the different rooms.

Ash Street School, Worcester, Mass. — Is a three-story brick building of six rooms, with an average attendance of about two hundred and sixty pupils. This building was formerly heated by seven stoves; no means of ventilation except by windows and doors. The school committee recommended that a system of heating, ventilating and sanitary closets be provided. The sanitary contract was let to the Pike Manufacturing Company, the heating and ventilating to B. F. Sturtevant of Boston. Steam heat is used, and a large fan for forcing either warm or cold air to the different rooms. The janitor, by a system of valves, can regulate the temperature as required. On November 19 a test was made in the different rooms. On the outside of building there is a brick shaft, constructed to supply air, with an opening in the clear of $7\frac{1}{2}$ feet, showing a velocity of 1,488, or 11,476 feet of air passing into the building each minute. Temperature outside, 50 degrees; average temperature of rooms, 71 degrees; average temperature of air entering rooms, 80 degrees; average amount of air entering each school-room per minute, 1,448 feet, or $34\frac{1}{2}\frac{9}{1}$ feet per pupil. There are also seven cloak rooms ventilated. The air removed by foul-air ducts showed but 676 feet per minute, or $16\frac{3}{2}\frac{}{1}$ feet per pupil. To account for the difference of the amount provided and the amount removed, the building is old, the windows loose. On placing the anemometer near the window sash I found the air was passing out of the rooms. The average tests for carbonic acid showed 6.1 in 10,000. With

this system, in my opinion, there is one serious fault; that is, the teachers have no control of the apparatus, which they should have in all cases. The sanitary closets are as good as would be put into any public building, and so far have proved that it is good policy to give children as good or better accommodations, in this respect, as they are provided with at their homes.

Leominster High School, Leominster, Mass. — Is a three-story building of wood; average attendance of two hundred and eighty pupils. On visiting this building last spring, I found an overhead system of ventilators, most of them closed, because, instead of removing the vitiated air from the rooms, they were removing the warm, pure air; and at times the air was blowing in from outside onto the heads of the pupils. In the basement I found the sanitary closets in a very bad condition; no provision for ventilation of the same except through the school building. At a town meeting, soon after, the school committee were authorized to contract for heating, ventilating, and for sanitary closets. The contract was let to the agent of the Smead system, and work was done during the vacation of the schools. November 5 a test of the system was made, with the following results: Temperature outside, 46 degrees; average amount of fresh warm air supplied each room, 1,787 feet per minute; average amount per pupil, $30\frac{1}{3}$ feet. The average amount of vitiated air removed from each room was 1,969 feet, or $33\frac{1}{2}$ feet per pupil. In order to apply this system in this school, the building was raised three feet, giving them a light, airy basement, with large rooms for use of pupils in stormy weather. The changes in this building are more notable than any other in this district, — from rooms that were formerly at times sickening because of the foul air and the odors of the sanitaries in the basement, to conditions as they now are. Certainly, in the opinion of the teachers and pupils, the expense is as nothing compared with the comfort now derived. The average test for carbonic acid showed 9.4 parts in 10,000 parts of air.

Lower Village Primary School, Athol. — Was a two-story wooden building of four rooms, with a variety of heating apparatus. There was one room with a Smead jacketed stove, which was removing some foul air; rest of building heated by furnaces located in cellar. This was one of the worst of quite a number of the school buildings in town. After receiving my order, the authorities decided to abandon this building, and erect a four-room brick school-house, which is nearly completed. The con-

tract for providing the same with sanitary closets, heating and ventilating, was given to the agent of the Smead system; and, judging from the work done, I have no doubt but that the rooms will be well ventilated, and the town will have one well-ventilated school-house.

North Brookfield High School. — Is a brick building, of seven rooms, average attendance of two hundred and twenty pupils. The ventilation was bad, more especially the two rooms in the basement. During the vacation, a contract for heating and ventilation was let to B. F. Sturtevant of Boston. The building was heated by direct steam; this plant was left for use in extremely cold weather, and heaters with engine and fan put in for supplying the rooms with air and indirect heat. The system, with a few changes made in regard to the foul-air shafts, will no doubt give general satisfaction. November 25 a test was made in the different rooms, with the following result: Temperature outside, 42 degrees; average temperature of air supplied, 88 degrees; average temperature of rooms, 70 degrees; average amount of air supplied each room per minute, 1,706 feet, or 29⅓ feet per pupil; average amount removed by foul-air shaft 1,458 feet, or 25¼ per pupil. The average test for carbonic acid showed 9.1 parts in 10,000 of air.

Inspector CHENEY reports: —

SIR: — In explanation of this my report of school-houses in my district, namely, that many of the systems that have been introduced for ventilating are not completed, and that a result of the improvements made was only obtained in one case, would state that this is partly due to neglect of committee in not commencing work soon enough after vacation, and partly on account of not having sufficient appropriation to complete the work; some towns commencing work on more buildings than the amount raised at the annual meeting for that purpose would complete, while others commenced so late that it was impossible for the work to be completed before the September term commenced, and it was left so that it could be finished Thanksgiving week, they having a week's vacation at that time. So it will be seen that, at the time of making this report, I am not able to give the results that I would like. Not only this, but the weather being so mild, the systems completed cannot furnish the amount of ventilation that they will when it comes colder and more fire is needed to give warmth to the rooms. In all cases in my district, the systems introduced depend on heat to operate them; and it is a well-known fact,

that, where no mechanical means are employed, no system will work when the doors and windows or other channels are opened, other than those intended to perform the work.

In most instances the orders for sanitaries have been readily complied with; although in some cases it was pretty hard to make the committee believe that the water-closets and privies at such buildings could be kept clean, and I was told by them that it was no use to try, — it could not be done. I suggested to them to give the pupils good respectable quarters for this purpose, and not think that anything was good enough for them, because they were children. I am pleased to say that, where the committees have provided nice places for sanitary purposes, they are kept in a cleanly condition, and seem to be appreciated by the scholars.

Bradford High School Building. — This is a two-story wooden building, and has a large class room on the second floor, which is used by the high school. The lower floor has one class room and two recitation rooms. The recitation rooms are used in connection with the high school, on the upper floor, the school on the lower floor being a primary grade. All rooms in this building were heated by stoves, and there were no means for furnishing fresh air to them except by windows. I found the air in the class rooms very foul, especially so in the lower room, where the air space was much smaller than it was in the higher grade.

Kimball Street School Building, Bradford. — Is a one-story, two-room wooden building, heated by stoves; no means provided for admitting fresh air, except windows. The rooms are 31 by 23 feet, by 13 feet 6 inches high, and contain sixty seats, having an air space of 160 cubic feet per scholar. Thus it will be seen that sixty little boys and girls were confined in each of the rooms in this building, with no means for admitting any fresh air except by windows. I say little boys and girls, for this was a primary school, and when the windows were opened some of these little ones got an objectionable draught upon them; and I saw a little girl in this school whose head was as bald as a billiard ball, who, I was informed by the teacher, had just recovered from an attack of typhoid fever, and must have been very sensitive to such draughts.

There are many simple rules of health violated because it is considered inconvenient to obey them; but it is the violation of these same simple rules that burdens life with that greater inconvenience, — ill health. The busy man will find that it takes far

less time to comply with hygienic laws than it does to suffer the sickness resulting from their violation.

But I am happy to say that the ventilation has been improved in this building, and yet the system was not completed when I last visited it. The system adopted is one that we are familiar with, and we predict for it the best results. I ordered additional means for ventilating the rooms in this building, and improvements have been begun, but were not completed when I last examined it. So far as the arrangements had been completed, they were all right. Two large foul-air flues had been built of brick, and they contain sufficient ventilating surface to produce good ventilation through the entire building. All class and recitation rooms have been connected with the foul-air flues, and some of the stoves have been jacketed, with fresh-air ducts leading to the stoves; and, when the system is completed, it cannot fail to give good results.

Town of Bradford. — A system of ventilation has been introduced in two of the school buildings in this town, which, when completed, cannot fail to greatly improve the condition of the air in the class and recitation rooms of these buildings. The system adopted is not an experiment, but one actually in use in several towns and cities, and giving the most satisfactory results.

Amesbury. — This town has improved the ventilation in five of its school-houses during the past year. The high school is a two-story wooden building, containing two large class rooms and two recitation rooms. In the class rooms each scholar has a cubic air space of 217 feet. The building is heated by steam, coils of pipe running around three sides of the room. There was no way of supplying fresh air to the recitation or lower class rooms except by windows; the upper class room had openings on two sides of the room, which contained in the aggregate 120 square inches. These openings were opposite the steam coils, and the air becomes heated by contact with them. The upper room, when inspected, contained 18 parts of carbonic acid gas in 10,000 volumes of air. Wooden ducts were provided as ventilators in this building, running up through the walls to the attic, and then running horizontally, about thirty feet, to a point near the centre of the building, and then perpendicular through the roof. When tested, there was no movement of air in them. There was no way of ventilating the recitation rooms except by windows.

Additional ventilation was ordered, and a system of ventilation has been put in, which, when completed, will give good results,

no doubt. A foul-air duct, containing nearly nine square feet, has been put in, and steam pipes have been so arranged as to heat the air, thus creating a draught, and drawing the vitiated air from the rooms. The fresh air is supplied to class and recitation rooms by openings in the walls, opposite the steam pipes, so arranged that the teacher can regulate the amount of fresh-air flow from the inside, as more might be furnished than could be properly warmed by the pipes on windy days.

Owing to some misunderstanding between the committee and the contractors, the steam had not been applied to the foul-air duct in the manner intended; and, when I examined it, a correct estimate of the amount of work it would do could not be obtained.

Whittier School, Amesbury. — This is a two-story, four-room wooden building; is heated by furnace. It gets its name from the noted poet, John G. Whittier, who was for many years a resident of the town. Wooden ventilators were provided for this building when it was built, and were, no doubt, made under the impression that all that was needed was to make a hole, call it a ventilator, and your building would be well ventilated. The ducts were small and crooked, and not capable of doing the work needed, even if they had been supplied with mechanical means to force the air through. The ventilation in this school has been improved, under my order, by the addition of two portable furnaces, to heat and supply pure fresh air to the rooms. The building is also heated by furnace. Extracting flues have been put in, and the ventilation has been much improved. When tested, was supplying eighteen cubic feet of fresh air per minute per scholar. The air after nearly a three-hour session, with windows all closed, contained less than 8 parts of carbonic acid gas in 10,000 volumes of air. When I made this examination of the improved ventilation, the weather was very warm, and there was but a small amount of fire in the furnaces. In colder weather I have no doubt there will be a much larger amount of fresh air furnished.

The Ferry School Building, Amesbury — A two-story, two-room wooden building, heated by stoves; had no ventilation. The lower room has had a jacketed stove put in, and furnished with a fresh-air supply, which adds something to the comfort of the room. But in this building, as in the Agassiz, they have not provided a proper foul-air flue, to take out the vitiated air. It was not the intention of the committee to leave these buildings in this way,

as they informed me; but, the appropriations having given out, or rather being all spent, they were obliged to leave them in this way until another year.

Agassiz School Building, Amesbury. — This is a two-story, four-room wooden building, and now there are but two rooms occupied, one on the ground floor and one in the second story. These rooms are heated by stoves, and, at the time I made my inspection, the air in them was very bad; nevertheless, the windows were dropped at the top. There have been some improvements made since I inspected it and issued my order for better ventilation. A jacketed stove has been put in, and supplied with fresh air. It is furnishing a certain amount of fresh air, but is not doing the work it is capable of doing, on account of there not being a proper foul-air flue.

The Mann School Building, Amesbury. — This is a one-room wooden building, heated by stoves, with no means for supplying fresh air except by windows. This school has a seating capacity of sixty, and is usually full. A trap in the centre of the ceiling can be lifted, to take off the hot air. I have now described to you the condition this building was in, when inspected by me, so far at least as the ventilation was concerned. An order was issued for additional means for ventilating this building, and has been complied with in the following manner: A jacketed stove has been put in, and a fresh-air duct furnishes pure air for the room, which is warmed by coming in contact with the stove before it circulates in the room. A foul-air duct has been put in, to draw out the vitiated air. The system had not been completed when I made my last visit to this school, but was working, so far as they had been able to complete it. The jacketed stove was furnishing considerable fresh air, but was not doing the work it would do when the foul-air duct was completed and furnished with heat. The teacher thought a great improvement had been made, and was quite well pleased with the results already obtained.

Charles Street Parochial School, Newburyport — This is a one-room wooden building, owned by the city, and was formerly used for one of the city schools, but was abandoned some years since for a better one, and is now rented to the Catholics for one of the parochial schools. This room is 29 by 21 by 11 feet high, and, when inspected, one hundred and forty-five children were attending school here, each scholar having but 46⅛ cubic feet of air space. The sanitary condition of this school was rather bad.

I issued an order for better sanitary appliances and ventilation, under chapter 119, Acts of 1888; and when I called there recently I found the sanitary condition somewhat improved, and the number of pupils reduced to one hundred. The room now contains more than double the number it ought to; but, as it had been reduced nearly one-third, I considered an improvement had been made, and so report it.

Johnson School, Newburyport. — A four-room, two-story brick building, which originally contained but two rooms; but, a partition having been put through the centre of each room, it now contains two rooms on each floor, which are heated by stoves, the centre partition being mostly glass, to furnish light for the desks near the middle of the building. There was no means for ventilating except by windows; and, the building being low studded, but a small amount of air space was furnished per scholar. The sanitary condition of the school was rather bad, the effluvia from the privies being very perceptible in the school-rooms, when the wind was in the direction from the privies. I ordered new privies built, and ventilated; a new vault in a new place, and a system of ventilation for the school-rooms. When visited last, the order had been complied with, so far as the sanitary was concerned; a new vault and building had been built, and it was in a cleanly state and free from the bad odors of the old one.

Kelly School, Newburyport. — This is an eight-room, two-story brick building, built in 1872. Three brick ventilating ducts were built in the walls, at each end of the building, two of which were connected with the roof by wooden ducts so arranged that there are two right angles and one quarter turn, thus creating a large amount of friction; and, considering that there was no means of heating the flues, the velocity of the air through them was very small, if any. Openings into the ventilators were from the top of the room. These were the arrangements for ventilating the best school-house in the city of Newburyport. The sanitary conditions of the building were even worse than the ventilation. A well had been dug in the bottom of the cellar, which formerly furnished water for the scholars; but, on account of the bad odor emanating from it, was filled up a few years ago. This, in connection with the fact that the basement had never been whitewashed since the building was built (as I was informed), produced a very disagreeable smell in the cellar. All the girls in the school have to go through this cellar to reach the privies, which were located

in a building about thirty feet from the school-house, and were in a very bad condition, so far as ventilation was concerned. This, in connection with the fact that I actually found 50 parts of carbonic acid gas in 10,000 volumes of air, in some parts of the cellar, I considered sufficient facts for me to issue orders for a general cleaning up. I accordingly issued orders to have the cellar cleaned and whitewashed, a part of the filling taken out of the well, and clean gravel put in, and cemented over the top, the bottom of the cellar being cemented, with the exception of this place. A system of ventilation was ordered put in, the school-house and the privies cleaned and ventilated. The cellar has been cleaned and whitewashed, the well cemented over, and now is in a fairly good condition. Owing to some misunderstanding among the public property committee, the order for ventilation in the school-house has not been complied with. The chairman of the committee informed me, when I last saw him, that it should be.

Inspector POPE reports: —

SIR: — In the matter of the enforcement of the laws that have been in my charge in the South-eastern District, I have the honor to report the following: —

The orders I have found it necessary to give, — under chapter 426 of the Acts of 1888, "An Act in Relation to Ways of Egress and Means of Escape from Fire in Certain Buildings;" and chapter 251 of the Acts of 1883, "An Act to Secure Better Provisions for Escape from Hotels and Certain Other Buildings in Case of Fire," — have been in most cases complied with, or the changes are now in process of construction.

Chapter 316 of the Acts of 1888, "An Act to regulate the Erection and Construction of Certain Buildings," requires that plans of the proposed building shall be filed with this department. This has been done in but few cases, and most of the plans I have been able to obtain are of buildings which were partly or wholly completed, and the plans received after my insistence on a compliance with the law.

Under Chapter 399 of the Acts of 1888, "An Act providing for the Inspection in Certain Cases of Buildings and Other Structures alleged to be Unsafe or Dangerous," there have been four complaints in this district, viz.: the Leslie building, Hyde Park, which was found to be overloaded on the third floor, and the excessive weight was by order of this department immediately removed; the Armory building, in Plymouth, in which no evidence was

found of any dangerous weakness, and the building was considered safe for the number of people that could properly be accommodated therein, and so reported; the Ames school-house, in Dedham, which was found to be safe, and so reported; the Hancock Hall, in Quincy, in which case this department recommended that the floor be levelled up and properly supported where necessary.

Chapter 149 of the Acts of 1888 is "An Act to cause Proper Sanitary Provisions and Proper Ventilation in Public Buildings and School-houses." In the matter of ventilation of school-houses, while I have not been able in this district to obtain the results desired, still, there have been some buildings greatly improved, and quite a number are now in process of construction, both new buildings and those wherein changes are being made. I find, to make even the improvements that have been made, effective, it will need further information and instruction on the part of the janitors, and in some cases even the teachers. Many janitors seem to have an idea that their only duty is to burn as little coal as possible, and consequently attempt to take the air from the cellar instead of from outdoors, on the basis of being able to heat it easier. In some buildings the furnaces are so constructed as to take a large amount of air from the cellar, and some even have no cold-air boxes at all, but rely entirely on the cellar for the fresh air they heat.

From the experience I have had in the matter, I am of the opinion that the best results will be obtained where the fresh air is brought into the room on the warm side at a distance of seven to eight feet from the floor, and where the foul or used-up air is taken out near the same location at or near the floor line. I am also of the opinion that better results will be given by heating a large amount of fresh air to a low temperature and with little extra cost of fuel, than to heat a small amount of air to a high temperature, thereby burning the life out of it. In the advice I have given, I have based it on these opinions. I also am confident that the supply pipes should be without closing resisters, but should be connected with the cold-air supply in such a manner that the teacher could, with a cord or chain attached to a damper, control the temperature of the air admitted, but in no case be able to cut off the supply.

Centre School, Norfolk. — This is a two-story, two-room wooden building, built a number of years ago, one story high, and this season raised, and another story and a high basement added. At the suggestion of this department, a stack 2 by 3 feet was built, and the smoke pipe carried up in it. Arrangements have

been made to have a small stove in the lower portion of the stack, to create a draught. The ventilator pipes, 23 inches in diameter, lead from each room near the floor line to the base of the stack, entering below the stove. At the time of examining the building, the results were not as good as desired, there not being suitable means of introducing fresh air.

Park School, Stoughton. — This is an old-fashioned, one-room building, and, when inspected in March last, the only means of obtaining fresh air was by the windows, and the means of carrying out the foul air was a hole in the ceiling. In this building the ventilation was ordered improved, and the following changes have been made: a jacketed stove has been put into the room, taking air from outside through an opening having an area of 3½ square feet; this air duct is controlled by the teacher. A stack has been built at the rear of the room, having a small stove in it above the inlets, which have an area of about three square feet. The results in this building, while showing a great improvement over the inspection in March, and the air not in a very bad condition, might have been much better had a fire been kept in the small stove in the stack.

West School, Milton. — This is a two-story, two-room wooden building, and, when inspected in February last, both rooms were ventilated into a flue of the chimney; also ceiling ventilation in the upper room. They were heated by an ordinary furnace, overheating a small amount of air. The most of the air received was by the use of window boards. An order was issued for additional ventilation; and changes were made in the ventilating shaft, and a stove added, to create a draught. The fresh air is now supplied to this building by a Hygeian heater, the construction of which has been somewhat changed or added to by carrying the cold-air box along the top of the furnace, and connecting it directly with the hot-air supply to each room; so that the teacher may have control of the temperature, by the aid of a damper connected with a chain near the desk. The damper merely gives either hot or cold air, as desired; but the supply is not cut off.

The South school and the East school in Milton have been improved in a like manner.

Inspector MOORE reports: —

SIR: — In the matter of ventilation of school-houses, we have had to contend with many obstacles, the chief of which has been a neglect of appropriating sufficient money to meet the require-

ments of good ventilation in the several towns. In a number of towns small appropriations have been made for temporary relief, and with the understanding that another year appropriations will be made for introducing suitable systems of ventilation. The town authorities seem to have begun to realize the necessity of providing suitable ventilation for the school buildings, and without doubt another year some extensive improvements will be made.

High School Building, Marlborough. — This is a three-story wooden building. Extensive alterations have been made in the interior arrangements, and the Smead system of heating, ventilating and sanitary closets has been put in. A test of the air in this building showed from 20 to 22 feet of air per scholar supplied each minute, and as low as 8.3 parts of carbonic acid in 10,000 volumes of air.

Lokerville School-house, South Framingham. — This is a new, one-story, two-room wooden building, with basement. One room is unoccupied. Is ventilated by the Ruttan-Smead system, and with that system of sanitary closets. The room in use is provided with forty-one seats, and the attendance is thirty-eight. A test of the air, made just before the close of school, at noon, showed but 6.6 parts of carbonic acid in 10,000. A test of the quantity of air supplied showed 25 cubic feet of air per minute for each scholar, with the temperature at 65 degrees.

New High School Building, Hopedale. — This is a new, two-story wooden building, and has been furnished with the Ruttan-Smead (under floor) system of heating, ventilation and sanitary.

No. 1 School-house, Hopkinton. — This is a two-story, four-room wooden building. In the lower northerly room a Fuller & Warren jacketed stove has been provided, and an additional brick flue has been opened for ventilation. In the upper northerly room a similar stove has been provided, and a twenty-six-inch galvanized iron pipe, extending up through the roof, with a top ventilator, has been put in. In the two southerly rooms window ventilation has been provided.

Inspector WHITE reports: —

SIR: — In approaching the close of my work for the year 1889, I have the honor to report continued progress in the effectiveness of all the laws, relating to the inspection of factories and public buildings, committed to me to enforce. The more these laws are

considered by the people, and the more their beneficial operation is seen, the stronger public opinion becomes in their favor.

One of the acts of the year 1888, chapter 316, requires that plans of all buildings enumerated in that act shall be submitted to the State inspector before construction. This act met at first with some opposition, principally from architects, who supposed it would entail a burden upon them in preparing the plans; and from superintendents of buildings and local committees, who seemed to think it would in some way conflict with their duties or with the local ordinances. When the architects came to understand that all the plans required were such as would show the ways of egress and means to prevent the spread of fire, they generally cheerfully acceded to the requirements of the law; and when the local authorities came to see that the State was assuming no more power under this law than it had assumed for many years under other statutes, and that no interference with local ordinances was intended, or even possible, under the new statute, they soon became reconciled to its operation.

As I understand the law, its object is to protect the lives of the occupants of all buildings coming under its provisions, and that it in no way conflicts with or supersedes any local ordinance for that purpose. If the plans and specifications show that sufficient provision is to be made to protect the inmates from fire, the State inspector requires nothing further, and he has no power and no disposition to in any way interfere with the local regulations as to the construction of the building.

"An ounce of prevention is worth a pound of cure," in this matter as in others; and many times a slight change in a building, which can be made without expense during its construction, will save many dollars that would have to be expended to render it safe after it is completed.

No ordinance or law that can be framed will fit every case. Much must necessarily be left to the discretion of the inspector; and here is where the work of the State inspector is valuable, as he is invested by the statute with large discretionary power. The local ordinances are generally arbitary in their provisions, and give the inspector, if there is one, very little discretionary power; and I have frequently made requirements or suggestions as to means of securing safety from fire which were perfectly satisfactory to the owners of the buildings, and which would have probably been made by the local inspector, if he had been invested with the authority to do so.

In enforcing the provisions of chapter 426, Acts of 1888, which

applies mainly to buildings already constructed, I have experienced very little opposition. Every order that I have given under that law, except one, has been complied with, or I have the assurance of the parties interested that they will comply as soon as possible. At first some of the owners of buildings thought that the new law was too stringent in its provisions; but a more careful examination soon convinced them that the main difference between this act and the laws which it superseded lies in the increased responsibility imposed upon the inspector. The certificate which the inspector is required to issue for every building which is found to conform to the provisions of the act, is held to be conclusive evidence that the owner has complied with such provisions; and would therefore seem to effectually protect him against all suits brought in consequence of injuries sustained in any such building.

A large portion of my time during the year past has been devoted to the examination of school-houses, as to their sanitary condition and means of ventilation; and in nothing connected with such buildings in this State is there greater room for improvement. The law in regard to sanitary appliances, whether wholly efficient or not, is very explicit. There must be no odor in the building arising from any such cause. There may, of course, exist an unhealthy condition in a building, without perceptible odor; but, if such odor is present, the duty of the inspector is clear.

The provision as to the ventilation of the rooms is not so clear. The air must not become so exhausted as to be injurious to the health of the children. It is generally admitted that impure air may be injurious to health; the only question is as to the extent of impurity which is to be considered dangerous. The consensus of opinion of the best authorities appears to be, that, if carbonic acid is found in the air of a school-room to the extent of .0008 of its volume, it indicates a condition of that air that may render it unfit for respiration; and the opinion seems to be equally well founded, that it will require a supply of fresh air of from thirty to fifty cubic feet per minute for each person, — dependent on the perfection of the circulation secured, — to keep the carbonic acid down to the required minimum. In my examinations I have frequently found the air supply very deficient, in many cases not more than five or eight cubic feet per minute for each scholar; and the increment of carbonic acid very great, the amount in the school-rooms being sometimes eight times that contained in the outside air.

The greatest opposition to better means of ventilation in our school buildings seems to come from an exaggerated idea of its

cost. Many people think that, if we are to provide for two thousand cubic feet of air per hour for each pupil, instead of five hundred feet, it will cost four times as much to do it. As a matter of fact, some of the best authorities on heating that I have been able to consult, say that the cost will be little, if any, greater.

Up to the time of the passage of the present law, very little attention had been paid to ventilation in our school-houses. The great object sought was to heat them as cheaply as possible. I have known of many cases where heating by steam by the "indirect method," which did furnish some air for the children, has been abandoned for the direct method, which was supposed to be cheaper because it warmed the same air over again, instead of letting in a fresh supply from the outside. Whenever there has been a demand for anything new, Yankee ingenuity has generally been able to supply the want; and I venture to predict that, if the present law continues in force, new and improved appliances will be devised, by which two thousand or even three thousand cubic feet of air can be heated and distributed in a building for less than it now costs, by most of the methods in use, to heat one thousand feet. In fact, there are scores of buildings in which it would be positive economy to take out the present heating apparatus, and substitute improved appliances, which would furnish a much greater amount of air.

I subjoin a detailed report in regard to the improvements made in several of the school buildings in my district during the past year, selecting only such as I deem may be of public interest, by reason of the methods employed or the results attained.

High School, Concord. — This is a two-story frame building, provided with the Smead system of heating and ventilation, and dry closets. The inspection of this building was made under very favorable circumstances to secure good results; and, as will be seen, the showing was very satisfactory. In two rooms the average amount of air supplied was found to be a little over thirty feet per minute to each scholar, there being forty-two pupils present in each room at the time of inspection. The tests for carbonic acid showed an average of 5.65 parts in 10,000. The sanitary provisions seem to be excellent.

Peabody School, Cambridge. — This is a new three-story brick building, heated and ventilated by the Smead Company, and provided with their system of dry closets. The sanitary appliances were working well. There were about forty pupils present in each of the rooms inspected, and the amount of fresh air supplied from

the furnaces was found to average 33½ cubic feet for each scholar per minute. The tests for carbonic acid were made within a few minutes of the close of the school, and the windows had not been opened during the session. The average of the tests shows 7.7 parts of carbonic acid in 10,000 parts of air.

Varnum School, Lowell. — This is an old, two-story brick building, of eight rooms, with an annex of two rooms. At the time of my first inspection, I found good-sized ventilating flues in the annex, which were doing at that time fair work; the carbonic acid found being 10 parts in 10,000. The old rooms were bad, and better means of ventilation were required by me. A change was made from the direct steam to indirect method of heating, and galvanized iron pipes, 24 inches in diameter, were put in from each room, leading to a ventilator on the roof. These pipes are heated by steam pipes running from the bottom of each flue to about five feet above the attic floor. Gas burners are also put in, to heat the pipes when there is no steam on. A test was made, October 24, with the following results, being an average of the rooms tested. Weather, fair; temperature outside, 42 degrees; in rooms, 71 degrees; velocity in outlets, 512 feet per minute; pupils present, forty-seven; cubic feet of air extracted, 34$\frac{1}{7}$ per minute for each pupil; average of the tests for carbonic acid, showed 8.3 parts in 10,000. The temperature of the air at the breathing line was remarkably even, only varying half a degree in different parts of the room. The windows in the recently ventilated portion of the building are not used at all for ventilation, and, at the time of testing the air for carbonic acid, which was but a few minutes before closing the school, had not been open during the session. This building was ventilated under the direction of Mr. G. T. Woodward, superintendent of buildings in Lowell. Some changes, which might easily be made in adapting this method to another building, would, in my judgment, tend to produce still better results.

Charles Street Training School, Lowell. — This is a two-story frame building of seven rooms. It is heated by steam and ventilated by galvanized iron ducts, 24 by 26 inches, heated by gas burners, and converging into a central shaft in the attic. The air supply in the rooms tested was found to be 20 cubic feet per minute for each pupil. The test for carbonic acid showed 10 parts in 10,000. I think, by slight changes, which can be easily made, that very good results can be attained in this building.

Edson School, Lowell. — This is an old brick building of ten rooms. The means of ventilation are wholly inadequate; and, at the time of my first inspection, the sanitary arrangements in the basement were offensive. The arrangements for improving the ventilation of the rooms are not yet completed, but the water-closets have been ventilated in a way that promises to obviate all trouble from them in the future; and, as I have found a great many failures in the attempts to ventilate such appliances, I give a description of this one. The closets are on the girls' side, and consist of a long row of seats over an iron sluice or flushing vault. A galvanized iron ventilating pipe has been put in, leading from about the centre of this vault to a ventilator on the roof. This pipe is 12 by 36 inches in area, and is heated by six Bunsen gas burners, arranged just above the opening over the vault. The result is perfect ventilation, and the absence of all odor in the room.

Prescott School, Somerville. — This is an old brick building containing twelve school-rooms, and, at the time of my inspection in February last, was heated by steam on the direct system. The ventilation was very bad, the tests for carbonic acid showing an average of 22 parts in 10,000 in the rooms; and a notice was sent by me requiring better means of ventilation. A new system of ventilation and a separate system of heating by indirect steam has been put in, by Mr. A. A. Sanborn of Somerville. The ventilating flues are of galvanized iron, two from each room, 16 inches in diameter, and converging in the attic into iron shafts, 4 feet in diameter, extending through the roof and capped with an Emerson ventilator. There are four of these central shafts in all, and in each one there is a coil of steam pipe above the openings of the ventilating pipes. There are to be two indirect steam inlets, 16 inches in diameter, in each room; but, owing to a fear that the heating power is insufficient, only one has been put in. The last inspection was made on a very mild day, and under rather unfavorable circumstances to secure good results; but there was found to be a great improvement in the rooms over last winter's inspection, the average of four tests for carbonic acid showing 10.25 parts in 10,000 in the same rooms where 22 parts in 10,000 were found last February. Of course better results may be expected when the system is completed.

Belmont School, Malden. — This is a new brick building of eight rooms; and the heating, ventilating and sanitary appliances were put in by the Fuller & Warren Company. The examination of

two rooms, made by me November 27, showed the following results: Temperature of rooms, 72 degrees; average temperature of air at inlets, 125 degrees; average supply of air from inlets, 31½ cubic feet per minute for each pupil present; average amount of air extracted from the rooms by the ventilating flues, 17 cubic feet per minute for each pupil present. Four tests were made for carbonic acid, two in each room, the doors and windows having been closed for thirty minutes in each case before making the test. The result showed a rather large increment of carbonic acid, the average of the tests giving 11.3 parts in 10,000 of air. I attribute this result in this case almost entirely to the inefficiency of the extraction flues, as the supply of air from the furnaces was sufficient to keep the carbonic acid down to at most 8 parts in 10,000, with proper circulation of air through the rooms.

High School, Waltham. — This is a three-story frame building, and, at the time of my first inspection, was heated by furnaces, and but poorly ventilated. There were ventilating ducts in each corner of the main room on second floor; but, as there was no heat in the ducts, the exhaust was very inefficient. The furnaces have been taken out and an indirect steam system substituted; and hot air or steam pipes have been put in to heat the ventilating flues. There are one hundred and thirty-five seats in the large school-room, and an average of sixty pupils present. At the time of my last inspection, I found the extraction flues were taking out 2,640 cubic feet of air per minute, or 44 feet per minute for each of sixty pupils. The day was a mild one, and the heat was shut off from most of the hot-air inlets. After closing the windows and doors for half an hour, the test for carbonic acid showed 6.6 parts in 10,000, only forty-five pupils being present. The great defect in the ventilation of this building is the failure to supply mixing valves so that the temperature might be controllable without shutting off the steam from the radiators.

MAYOR'S OFFICE, CITY HALL,
CHELSEA, NOV. 21, 1889.

RUFUS R. WADE, Esq., *Chief of Mass. District Police.*

DEAR SIR: — The subject of ventilation of school buildings in this city has this year received, on the part of the city council, a good deal of care and consideration. The people of Chelsea take pride in their public schools, and the educational advantages are supplemented with convenient and comfortable quarters for teachers and scholars. We have not only a desire to respect and obey the laws of the Commonwealth, but when those laws are consistent

with the physical development and comfort of teachers and children, it becomes a pleasure to enforce their strict observance.

The condition of our twelve school buildings, with one or two exceptions, as relates to ventilation, are excellent, and have been made so within the last two years, in conformity to the law passed by the Legislature of the year 1888. Thus the wise suggestions emanating from your office have received favorable consideration, much to the satisfaction of officials, teachers and pupils; and there are but few, if any, school-rooms in the city that do not admit a sufficient number of cubic feet of air per minute per scholar.

Special changes have been made in several buildings at a moderate cost, as compared with the results attained. Considerable money has been expended in remodelling our school buildings; but the greater portion of the expenditures were necessary, as the buildings were not in good condition.

The Shurtleff grammar school building has been enlarged several rooms, now numbering sixteen, with large hall; the improvements being commenced before the passage of the law relating to ventilation, but were completed after the passage of the law. In this building has been introduced the Smead system of heating and ventilating. The contract required 20 cubic feet of air per minute, for each of fifty-six pupils per room. This requirement has been met. The foul air, by this system, is conducted to the basement and disperses in the closets, drying up the excrement in a most satisfactory manner.

In the Carter school during the past summer there has been placed the Fuller & Warren heating and ventilating system. The contract called for 30 cubic feet of air per scholar per minute, sixty scholars to a room. This has proved most satisfactory, the amount of 35 cubic feet of air per minute, per scholar, by actual test, being supplied in some of the rooms, while in others it ranges from that number to 19, the average being fully 30. This same building for several years furnished only about 3 and 4 cubic feet of air per minute per scholar.

In the two buildings above referred to the committee on public property made a chemical test, the work being performed by Prof. William B. Hills of the chemical department of the Harvard Medical School. In the Shurtleff building the result of the determination of carbonic acid in the air was found, at the centre of the room, to be 14.36 parts in 10,000; while at the ventilator it was 16.53 parts in 10,000. In the Carter school building carbonic acid was found at the centre of the room to be 8.63 parts in 10,000, and at the ventilator 9.08 parts in 10,000.

Other school buildings in the city are greatly improved, and it

has been found quite inexpensive to make good ventilation; and I would call your attention to one instance. The Broadway school building is a wooden structure of four rooms, being built a few years ago, and there was no ventilation except what was received through the windows and doors. The building was heated by steam; and the superintendent of buildings, with an outlay of $450, ventilated this building satisfactory to your officers, by putting in a steam radiator of 100 feet heating surface, encased in a sheet-iron box, with an opening for fresh air of an area of 340 inches net. We have now an average of 25 cubic feet of air per scholar per minute, and the amount of carbonic acid compares favorably with the more expensive systems. Further improvements will be made along this line, as we believe it conducive to the health of teachers and pupils. A wholesome and beneficial law, it should be respected and complied with throughout the Commonwealth.

Yours respectfully,

ARTHUR B. CHAMPLIN, *Mayor.*

NEWTONVILLE, MASS., Nov. 27, 1889.

MR. RUFUS R. WADE.

DEAR SIR: — The law providing for the appointment of State inspectors of public buildings and school-houses is, in my judgment, a wise and beneficent one. It clothes the inspectors with authority to require that all school buildings shall be provided with proper means of heating, ventilation and drainage, and thus secures to their occupants health and safety. This authority may seem to some to be too great; but it should be borne in mind that the law imposes upon the inspectors grave responsibilities, and that authority should always be commensurate with responsibility. In my judgment, the law should be strengthened rather than weakened. Allow me to congratulate you upon your successful execution of the law. Under the advice and direction of the able assistants to whom you have entrusted the delicate and difficult task of supervising the details of the work, much has been accomplished in the school buildings of Newton in the direction of improved sanitation. Furthermore, it is believed that the improvements have been judiciously and economically made, and that they will prove a permanent benefit.

I believe that the highest good of the schools of the Commonwealth demand a vigorous enforcement of the law.

Respectfully yours,

THOMAS EMERSON,
Superintendent of Schools.

Systems and Methods of Ventilation.

The question has so frequently been asked during the past year, as to the several methods or systems which have been applied to school-houses and other public buildings, that I have thought it proper to print a description of some of the appliances that have shown good results, and that have been accepted by this department. I have previously stated in this report that we have no special system to advocate, and have approved of those only, which, after careful tests, have been found to meet the requirements of the statute.

Jacketed Stoves.

In the enforcement of chapter 149, Acts of 1888, I find by the reports of the inspectors that most of the school-rooms outside of our large cities are heated by stoves, and that any special system requiring heated flues is not applicable. To arrive at some conclusion as to what system could be recommended for this class of school-rooms has been the subject of careful consideration, and it has been found that the best means thus far devised for ventilating rooms heated by stoves, that approximates a good system of ventilation, is the "jacketed" stove. By the courtesy of the secretary of the State Board of Health I am enabled to give a description of the system adopted at the "Red Rock" Street school-house, Lynn, and to copy a portion of the report made by Dr. J. G. Pinkham: —

Red Rock Street School-house, Lynn.

This is a brick building of good construction, and in a healthy locality. The ventilating apparatus was put into it during the summer of 1886, and the description which follows is from the report of the committee on sanitation for that year: —

There are in each room two large stoves (Barstow's "Puritan," No. 18), one on each side of the room, near the front. Each stove is encased in a galvanized iron jacket about six and one-half feet high, with a spreading base. Air is admitted to the space between the stove and its jacket by an air box running through the side wall, the opening for each stove having a sectional area of four and one-half square feet, being large enough for the whole air supply of the room. In cool weather one stove in each room is used; in cold weather both stoves

There are two extraction flues, built in one stack, at the rear of the building, — one with a sectional area of 5.2 square feet for the upper

room, and one with a sectional area of 4.1 square feet for the lower room. They are of brick, and in an inner corner of each is a fire-clay smoke pipe connecting with the stove pipes. These smoke pipes end at the level of the chimney top, and the whole is covered with an iron cap, like an Emerson ventilator, but rectangular. For heating the flues, one of D. W. Cushing's "Ring Cylinder" stoves is set into the *with*, or partition between the flues, projecting into each. The flues are enlarged opposite the stove to compensate for the obstruction of its bulk. As the cellar does not extend under the rear of the building, the flues end at the floor level of the lower room. The openings from the rooms into the extraction flues are made at this level, from the lower room directly through the wall, and from the upper room by means of a thirty-inch tin pipe, running down beside the stack, from the upper floor. The flue-heating stove is set about three feet above the lower floor, and access to it is had through an iron door opening into the school-room. Most of the air withdrawn from the rooms goes through large openings close to the stack; the remainder (15 or 20 per cent.) is drawn through ducts under the back platform, and thence into the extraction flues. The total area of outlet openings from each room is about equal to the sectional area of its extraction flue. All outlet openings are covered with wire netting of about one inch mesh. Inlets on outside of building are protected by boxing and fine netting.

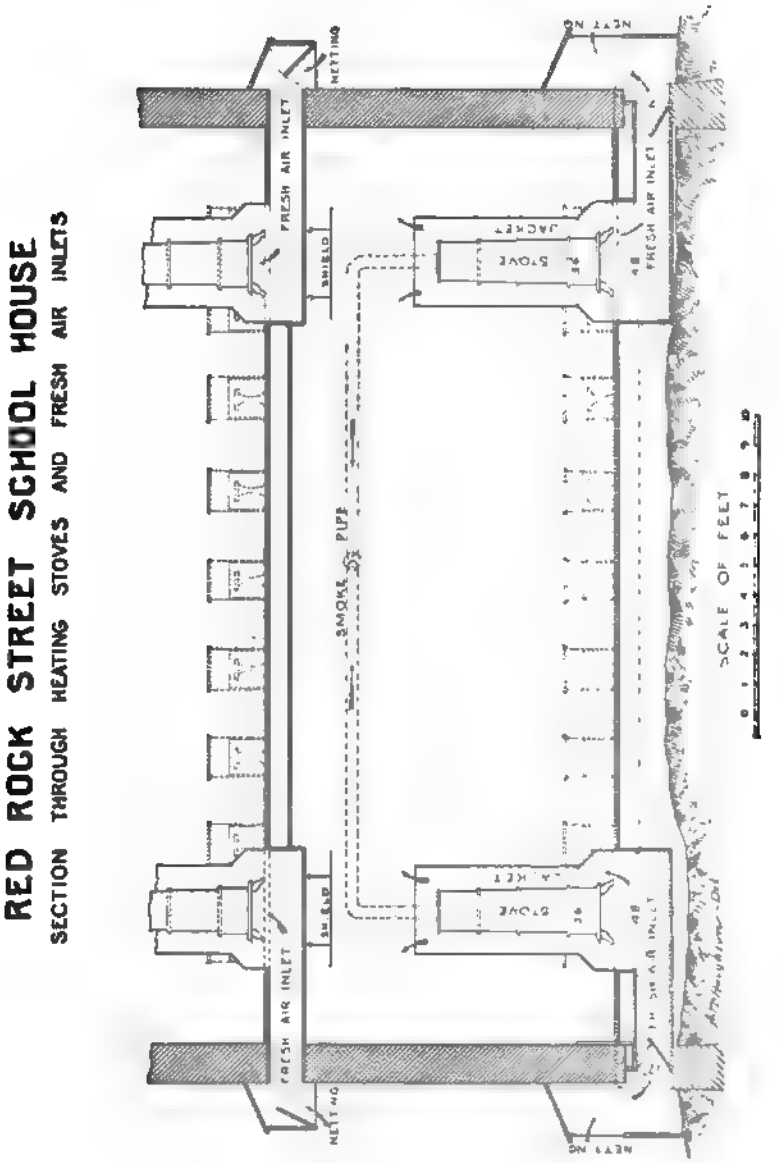
The illustrations which follow will make this description plain. All dimensions are given in the floor-plan and sections. The capacity of the lower room is 10,700 cubic feet, that of the upper 12,040 cubic feet, allowance being made for chimney, platforms, stoves and jackets, but none for furniture or persons. The air space per scholar, using the average attendance during the winter term of 1886 as the basis of calculation, is for the lower room 194 cubic feet, for the upper room 240 cubic feet. The actual air space enjoyed by each pupil in any school varies, of course, from time to time with the number in attendance. The average age of the pupils in the lower room is seven years, nine months; in the upper room, nine years, six months. The results at this school-house have been most excellent, as shown by charts A and B, and the accompanying tables. There was no difficulty in managing the apparatus after its working was fully understood. Visitors to the school note the seeming purity of the air, and the teachers bear similar testimony.

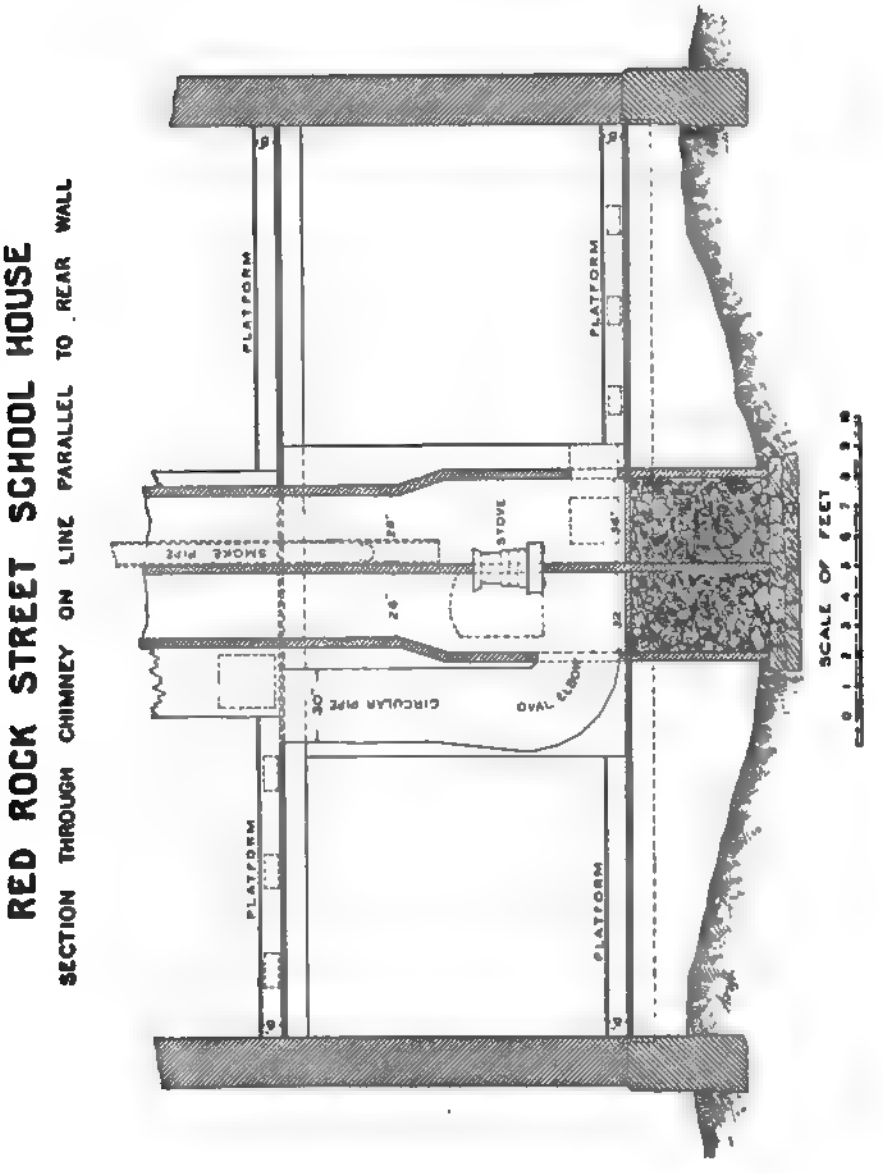
Measurements of the outflowing air have been made at various times. These show an average for the lower room of 108,510 cubic feet per hour, or about 2,100 cubic feet to each pupil; for the upper room, 84,664 cubic feet, or about 1,900 cubic feet to each pupil. In making these estimates, the cubic contents of the rooms were added to the outflow, and the average attendance of the pupils employed as a factor.

It is probable that in mild weather these figures would be some-

what reduced. They might be considerably reduced, and still leave quite a liberal supply for pupils of the ages specified, if the commonly received views as to the amount required are correct. It is intended that the fire shall be kept burning in the flue-heating stove at all times, except in warm weather. In this way the air supply may be kept up when the jacketed stoves are not in use.

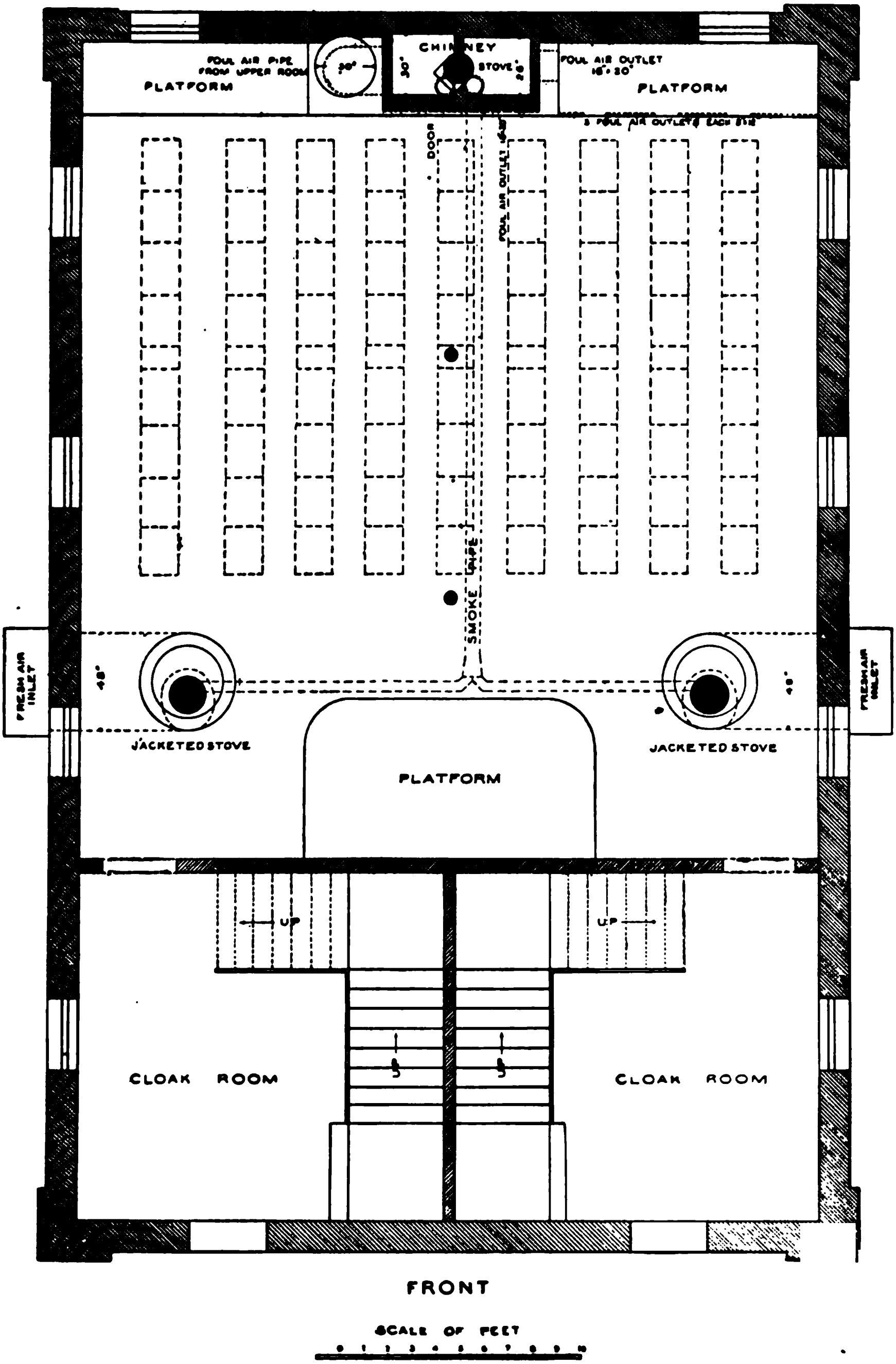
The air analyses have very uniformly shown good results.




RED ROCK STREET SCHOOL HOUSE
SECTION THROUGH CHIMNEY ON LINE PARALLEL TO REAR WALL
PLATFORM
PLATFORM
PLATFORM
PLATFORM
SMOKE PIPE
STOVE
CIRCULAR PIPE
OVAL
SCALE OF FEET

RED ROCK STREET - SCHOOL HOUSE LOWER ROOM

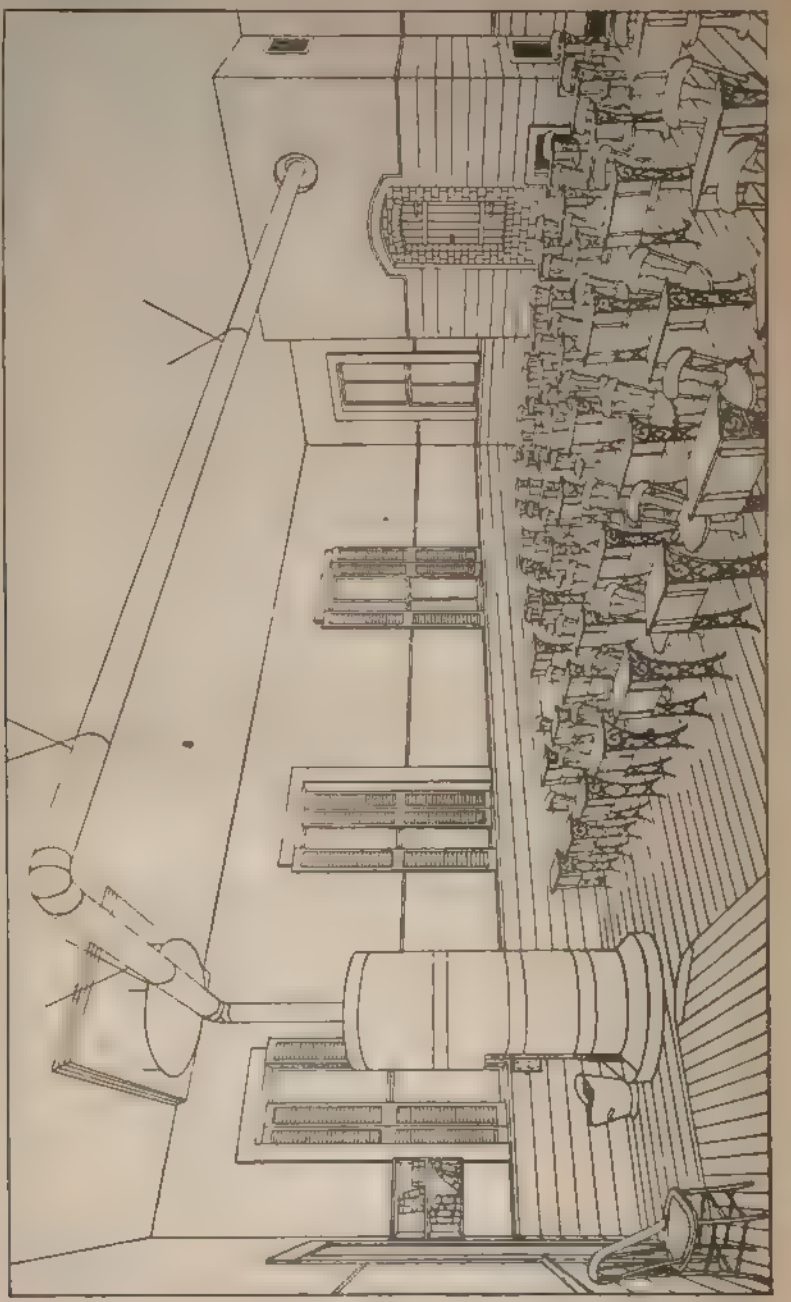
PLAN



FRONT

SCALE OF FEET

0 1 2 3 4 5 6 7 8 9 10



Red Rock Street School-house, Upper Room, Feb. 25, 1888.

Time.	Number of Persons Present.	Air Temperature. Fahrenheit.	Humidity of Air. Percentage of Complete Saturation.	Carbonic acid in Air. Parts in 10,000.	Rate of Discharge from Outlets. Cubic Feet per Hour.	Temperature out of Doors.
8.45, . . .	1	73.0	–	5.10*	–	35
9.00, . . .	52	72.5	30.0	–	–	–
9.30, . . .	52	73.0	33.0	–	–	–
9.45–50, . . .	52	70.0	40.0	–	89,478	–
10.00, . . .	52	69.5	40.0	–	–	–
10.15–20, . . .	52	69.0	42.0	7.78*	–	–
10.30, . . .	2	68.0	42.0	–	–	–
10.40, . . .	1	66.0	–	6.42*	–	–
10.45, . . .	52	66.0	35.0	–	–	–
10.50, . . .	52	–	–	–	90,720	–
11.00, . . .	52	66.0	39.0	–	–	–
11.18, . . .	52	65.5	41.0	–	–	–
11.30, . . .	53	67.0	39.0	–	–	–
11.42, . . .	52	70.0	–	7.46*	–	–
11.45, . . .	52	72.0	33.0	–	–	–
12.07, . . .	–	–	–	–	–	36

Wind from northwest, fresh. — Office of Water Board, Feb. 25: 8 A.M., Barometer, 30.16; D. B., 35; W. B., 33.5; Humidity, 73; 1 P.M., Barometer, 30.00; D. B., 36; W. B., 34.5; Humidity, 84.

* Mean of two samples.

Red Rock Street School-house, Upper Room, Feb. 25, 1888.

Time.	
6.45, . .	Inlets closed; outlets open.
6.50, . .	Inlets opened.
7.05, . .	Fire built in chimney stove.
8.25, . .	Six windows opened from ten to twenty inches.
8.35, . .	Windows closed.
8.43, . .	Air samples taken in two places in room.
8.48, . .	Scholars came in.
9.50, . .	Air-meter measurements in outlets: indicated discharge, 89,478 cubic feet per hour.
10.18, . .	Air samples taken as before.
10.23, . .	Recess began.
10.39, . .	Air samples taken as before.
10.44, . .	Scholars came in from recess.
10.50, . .	Air-meter measurements in outlets: indicated discharge, 90,720 cubic feet per hour.
11.40, . .	Air samples taken as before.
11.46, . .	School dismissed.

Contents of room, 12,040 cubic feet. Air space for each of sixty-six scholars, 162 cubic feet. Average age of scholars, nine years, six months.

Explanatory Description of the Smead System.

The Smead system of warming and ventilating uses large horizontal furnaces, with a long fire box and double return steel flues, so constructed as to prevent any part of the furnace from becoming overheated, and to afford a large radiating surface at a comparatively low temperature.

The furnaces are surrounded by a brick case, forming a large air chamber, to which fresh air is brought through arched openings at the bottom of the case, from a room in the basement opening directly out of doors. A large volume of air is warmed by passing up through and around the furnaces to the chamber over them. From this warm-air chamber rise vertical brick flues (A and B*), which convey the warm air to each school-room; these flues open into the rooms about nine feet above the floor, and near the centre of one of the interior walls. The fresh warm air enters the rooms at a temperature of 80 to 130 degrees Fahrenheit, and diffuses itself through the upper part of the room; while the foul air is drawn downward and out at the floor on the same side of the room that the warm air enters.

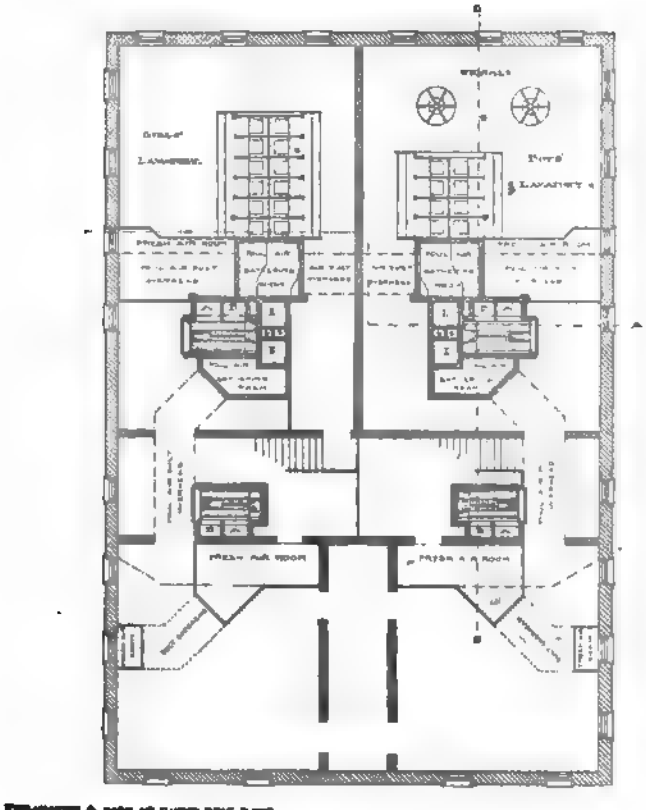
When the room is large, or a large amount of fresh air is required for a small room, two exit ducts for foul air are used, one on each side of the fresh-air flue, the object being to divide the outflow, and prevent unpleasant draughts.

The foul air is all collected in a gathering room in the basement, passing into the ventilating shaft (E) at the bottom. To the ventilating shaft is attached the smoke flue (S), so that the heat, passing off with the smoke, aids the upward current of foul air. The principal means, however, of heating this shaft sufficiently to secure good ventilation, is a small circular heater placed directly over the opening for the entrance of foul air into the shaft, in which fire is kept while the building is occupied. The heat generated by this fire creates a strong current out of the gathering room and up the shaft.

When the Smead dry closets are used, a horizontal brick vault is constructed, connecting the foul-air gathering room

* Letters refer to illustrations on pages 133–136.

to the ventilating shaft. Over this vault are placed iron seats. The excreta falls upon an absorbent or perforated platform, raised about one foot above the bottom of the vault. The foul air from the school-rooms collected in the gathering room passes through this vault to the ventilating shaft. In this way the heat that passes off with the foul air is utilized to desiccate the excrementitious matter deposited in the vault, leaving it in a condition to be easily removed or cremated.

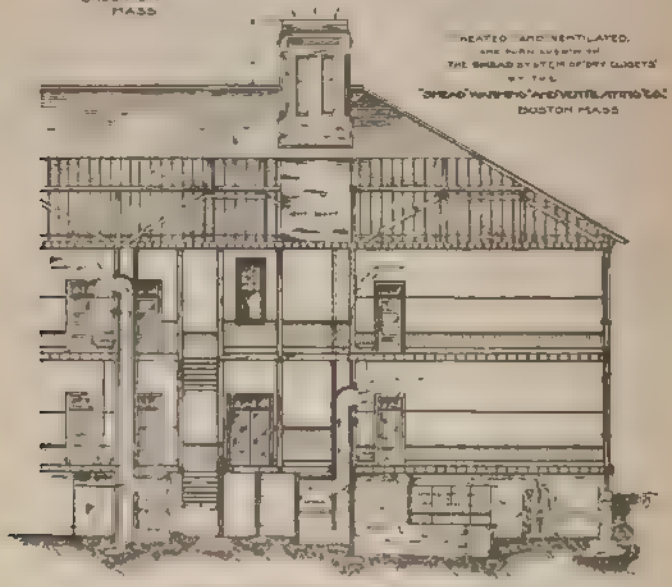


BASEMENT PLAN

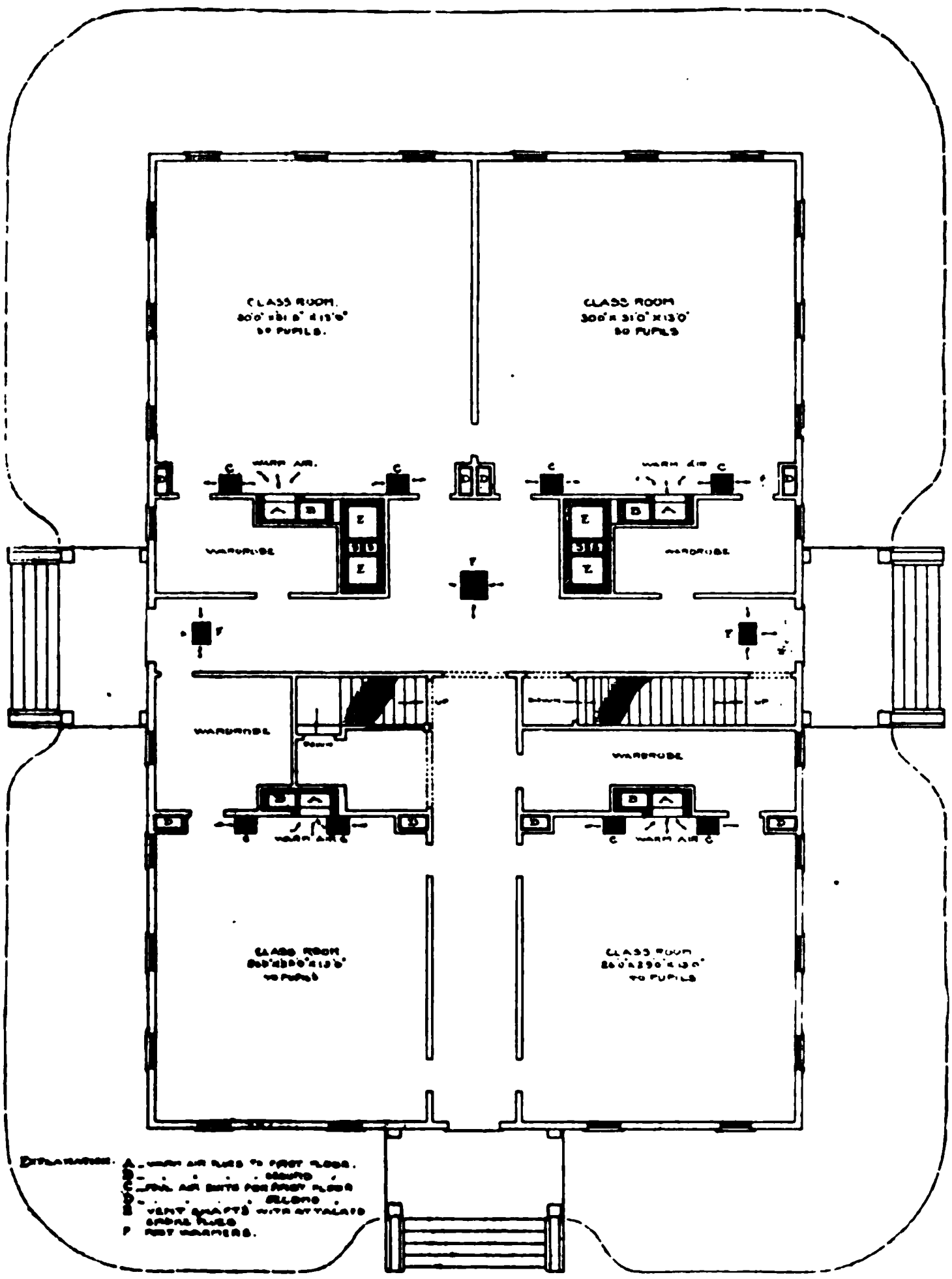
TRANSVERSE SECTION. (ON LINE A A. BASEMENT PLAN)

"SPRAGUE" PUBLIC SCHOOL
BROCKTON
MASS

HEATED AND VENTILATED.
ON THE PLAN SYSTEM OF
THE SHELDAY SYSTEM OF DRY CLOSETS
BY THE
"SHELDAY MANUFG. AND VENTILATING CO."
BOSTON MASS



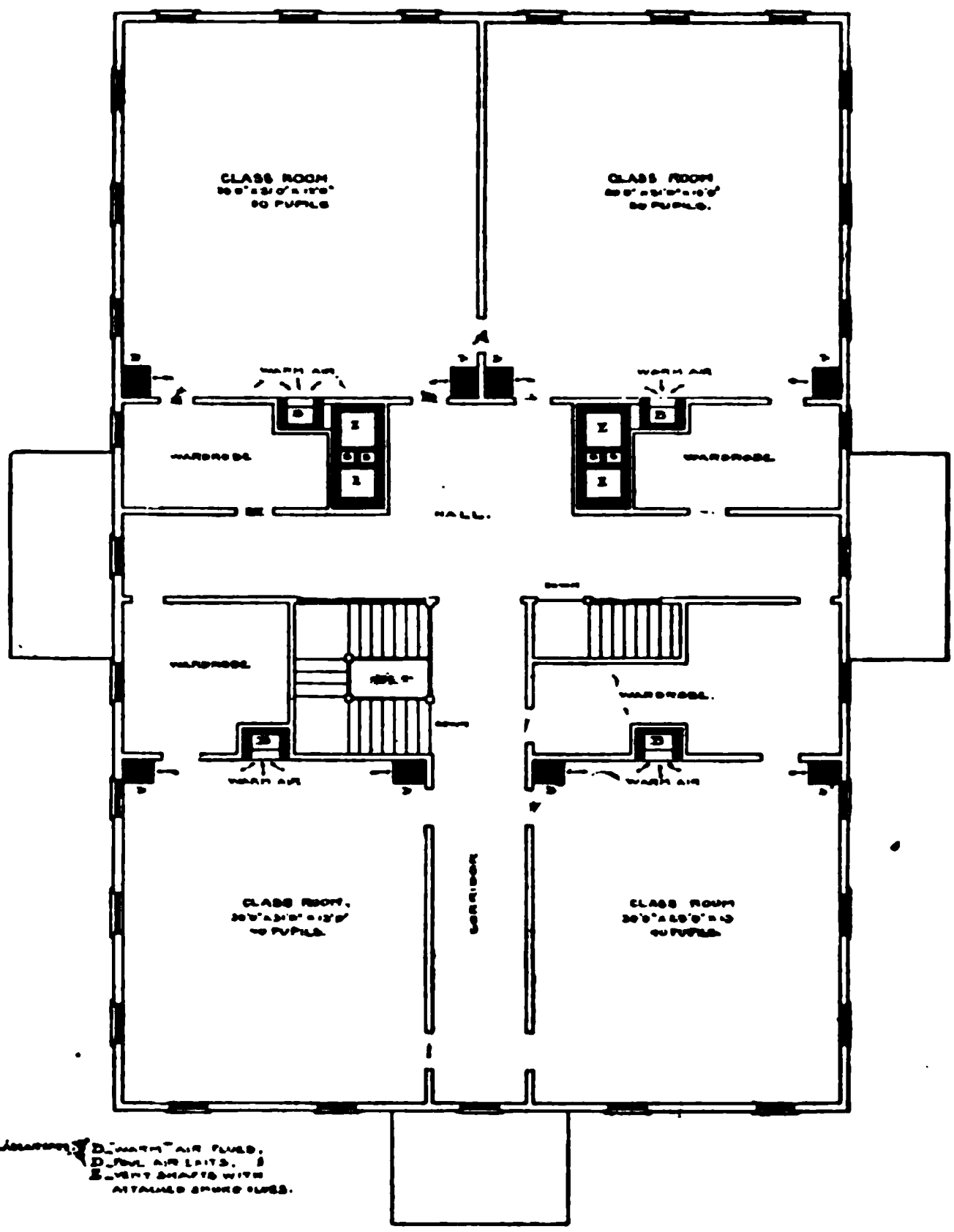
LONGITUDINAL SECTION (ON LINE B B) (BASEMENT PLAN)



SPRAGUE PUBLIC SCHOOL.
BROCKTON.
MASS.

FIRST FLOOR PLAN.

HEATED AND VENTILATED
AND FURNISHED WITH
THE SMEAD SYSTEM OF DRY CLOSETS
BY THE
SMEAD WARMING AND VENTILATING CO.
BOSTON, MASS.



'SPRAGUE' PUBLIC SCHOOL.
BROCKTON.'
MASS

SECOND FLOOR PLAN.

HEATED AND VENTILATED
BY THE
'SMEAD WARMING AND VENTILATING CO.
BOSTON, MASS.'

One of the many systems of heating and ventilation now coming into use in this State is that of the 'Fuller & Warren Company, of Troy, N.Y. A cut of the furnace in use by this company is shown on page 138. It is claimed that this furnace furnishes a very large amount of fresh air to the rooms, at a very low temperature; and that it is very durable, economical, and easily managed.

This company also has a system of warming and ventilating by the use of jacketed stoves, which may be easily

understood by the full-page illustration on page 139 of this report.

In the buildings ventilated by this company the fresh air is taken in near the top of the room, and the vitiated air is taken out at the bottom, and on the same side as the inlets. The illustration on page 141 (plate 6) shows the actual results obtained by this method in experiments made by Warren R. Briggs, Esq., architect, Bridgeport, Conn. Plates 1 to 5, on pages 140, 141, show instances of defective circulation in experiments also made by Mr. Briggs.

Plate IX (figures 1 and 2), on page 142, shows an improved form of cold-air box in use by this company, by which it is possible to shut off the supply of fresh air from the outside, and heat the rooms by circulation when the schools are not in session. This system also embodies a mixing valve, controllable by both teacher and janitor, by which the temperature of the air entering the rooms may be regulated at will, but by which the supply of air cannot be shut off, and is kept at all times nearly constant in volume.

The Fuller & Warren Company are also the proprietors of a system of sanitary appliances, constructed on what is known as the "dry-closet" method, and illustrated on pages 143, 144. This system may be seen in operation at the Centre Grammar and Belmont schools in Malden: —

These closets are entirely fire proof. They are compact, taking up about the same space as water-closets. For closets built in basements, the foundation is a bed of cement, and the walls of the pit for retaining the deposit are of brick laid in cement. The construction is such that in no case can the urine (or any of the contents of the closet) come in contact with any wood surface. All the surfaces exposed are such that no material can be saturated with the moisture; therefore, there is at no time any perceptible odor, *and when burned out, the pit is as clean as when new.* The excrement is deposited on a perforated false bottom, or screen, which allows all moisture to fall to the bottom of the pit. This not only separates the solid from the liquid, but has the additional advantage of presenting three surfaces to the desiccating current of air passing through the closet. In the direct line of the current of air entering the pit is placed a heater, for raising the temperature of the air current, when the atmosphere is charged with moisture, as on rainy days. In the boys' closets in school-

houses, or wherever closets are to be used by males only, we provide Short's patent ventilated urinal, in which, to prevent odors from rising, a constant current of air (which is afterwards used for desiccating the contents of the closet) is passed downward over the metal or stone surface of which the stalls are constructed. All matter is dried and burned without removing same from place originally deposited. All is utterly destroyed by fire, and possibility of infection or contagion is thoroughly and completely obviated.

Fuller & Warren Company School-house Furnace.

PLAN FOR WARMING & VENTILATING SINGLE ROOM SCHOOL

The six following cuts are the ones referred to in the description of the Fuller & Warren Company's system, as illustrating the circulation of the air in school-rooms.

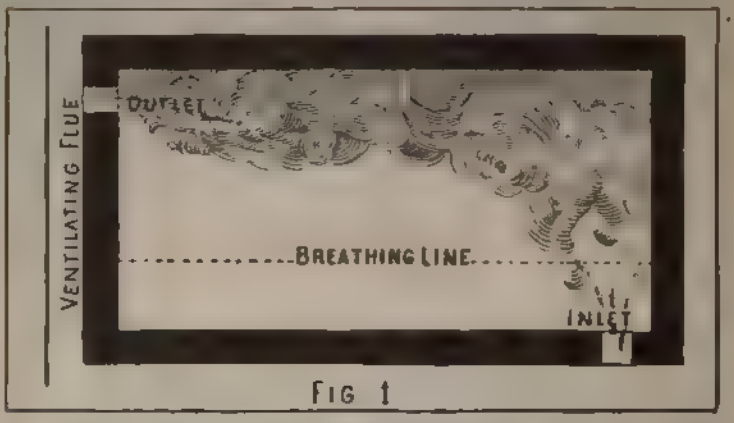


FIG 1

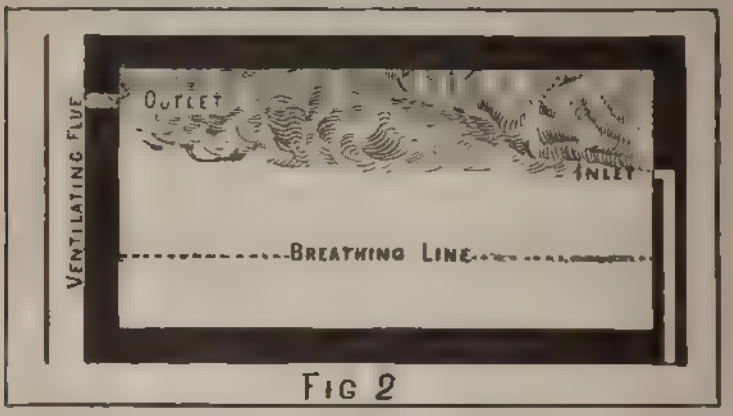


FIG 2

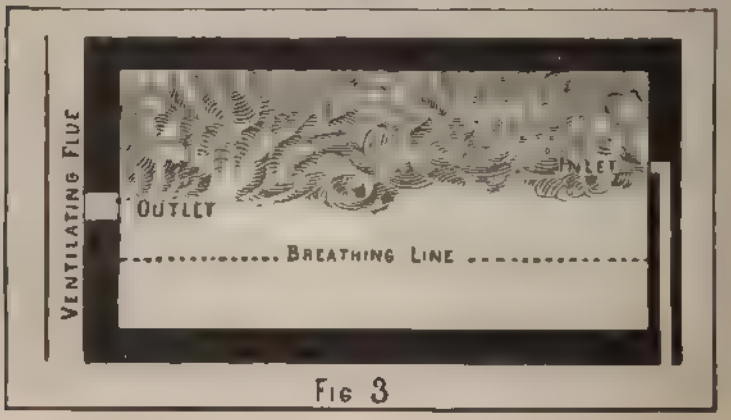


FIG 3

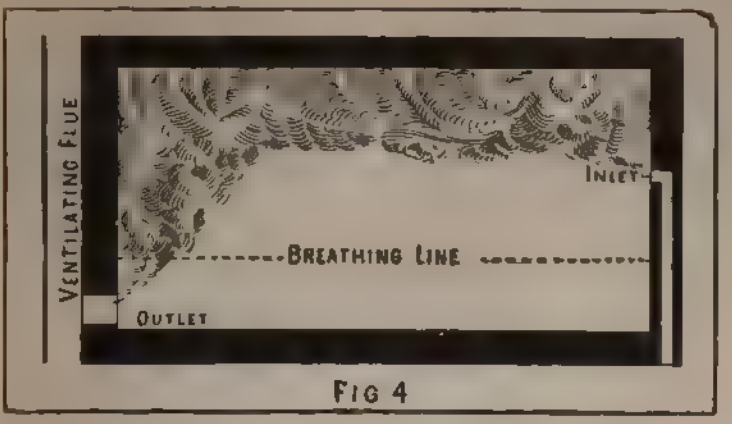


FIG 4

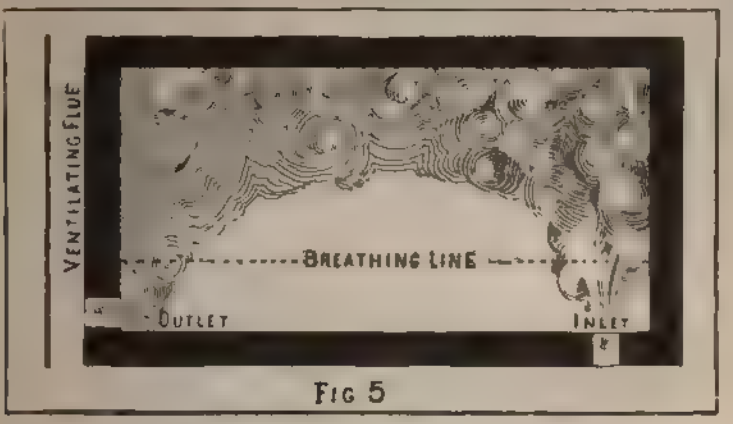


FIG 5

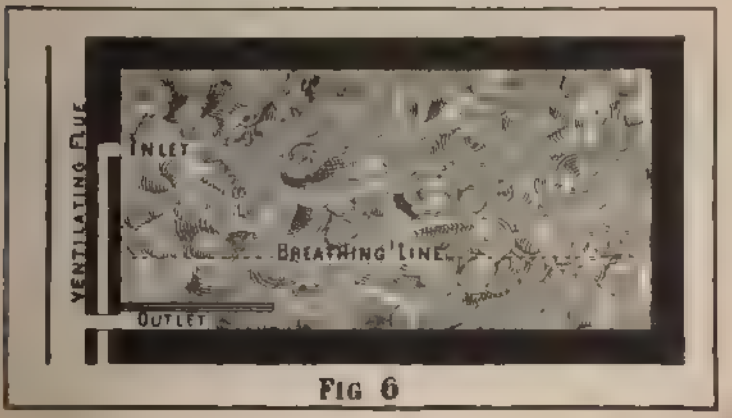
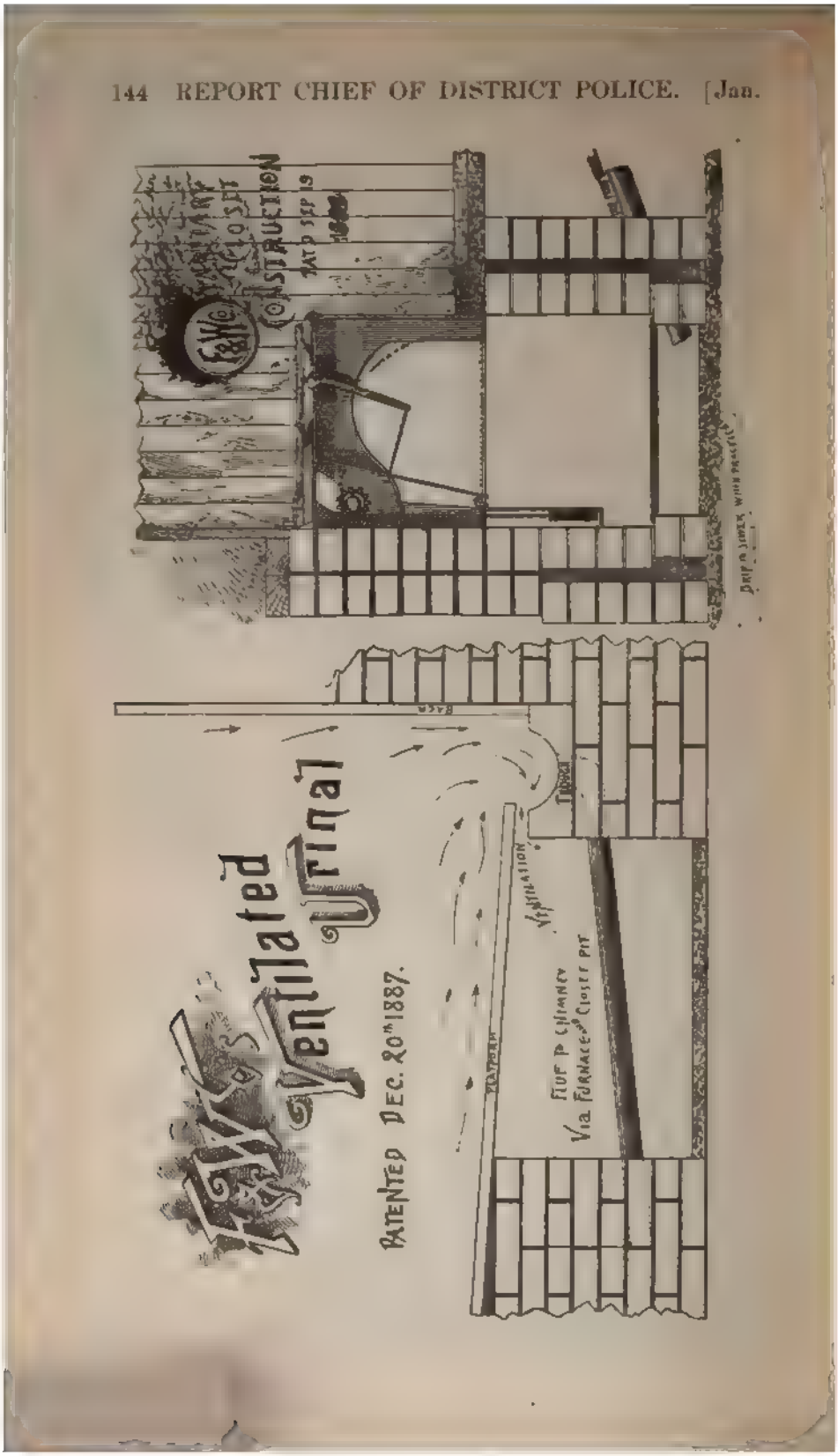


FIG 6

PLATE IX., FIG. 1.

PLATE IX., FIG. 2.

FULLER & WARREN COMPANY
PATENTED
SANITARY CLOSETS
AND
VENTILATED URINAL


Ventilated Urinal
PATENTED DEC. 20th 1887.
CONSTRUCTION
PLATFORM
VENTILATION
FLUE TO CHIMNEY
Via FURNACE and CLOSET PIT

The Mahony-Smith System of School-house Ventilation and Warming.

In quite a number of schools in the Commonwealth the ventilating system and warming apparatus have been introduced by the School-house Ventilating and Warming Company, Troy, N. Y., under what is known as the Mahony-Smith system, which, in its general features, is a combination of the plenum and exhaust methods.

At the fresh-air inlet there is an automatic "air-governor," the object of which is to decrease the area of the inlet in proportion to the force of the wind, so that the volume of air admitted shall be constant without attention by the janitor. For use during vacations, and occasionally in the night during very severe weather, a device is used by which the air exhausted from the rooms may be reheated.

It is claimed that the fresh-air supply is warmed to a temperature varying from 80 to 120 degrees, according to the weather, in chambers in which is placed the heating apparatus, consisting, as may seem desirable, of either indirect steam-heating surface or furnaces. Where steam heating is employed, from 250 to 400 square feet of radiating surface is used for warming the air for each room. Where the warming is by furnaces, the air-warmer manufactured by the company is employed; one furnace generally being used to heat four ordinary school-rooms. The dimensions given of the air-warmer are as follows: height, 7 feet; width, 5 feet; length, 13 feet; weight, 4½ tons; grate surface, 10½ square feet; extent of heating surface, 980 square feet. The construction seems to be such that proper provision has been made for durability and the prevention of the escape of gases.

Brick flues are constructed to conduct the fresh air from the heat chambers to the several rooms, and in them are placed dampers whereby the teacher may regulate the temperature of the incoming fresh air, but cannot decrease the size of the inlet. The fresh air is usually admitted at about 8 feet above the floors. From each room the vitiated air is withdrawn at a register near the floor, and as nearly as possible immediately beneath the point of inlet. The impure air is carried from all the rooms down to beneath the base-

ment floor, and thence through brick ducts to the base of the ventilating shaft, whence it is expelled.

The power used for exhausting the air varies with the conditions in each building; it being the policy of the company, where large buildings are being warmed by steam, to use mechanical ventilation; and, where the heating is by the air-warmers, ventilation is secured by the heated flue.

From the entrance of the fresh air to its admission to the rooms the system is wholly plenum. At this point the exhaust system begins, and completes the passage of the air through the building. Unless the construction of the building presents serious obstacles to the introduction of the necessary ducts, the foul air is gathered from all the school and cloak rooms to the foot of one common ventilation shaft. This shaft is of brick, carried to above the roof, and has within it the exhaust power, usually a large ventilating furnace, by which the air is finally expelled.

The Mahony-Smith dry closet is constructed for the purpose of so thoroughly evaporating the excrement, which falls upon a suitable grating, by means of the constant passage of air down from the closet rooms to the closet ventilating shaft, that it may be readily removed by burning. The Mahony-Smith water-closet, preferred by them to their dry closet, requires the use of water to remove the excrement from the slate-lined vault into which it falls. The removal of odors and offensive gases is intended to be accomplished by ventilation. The urinal is built of slate, and the company claim it to be so constructed that a current of air may be constantly passed over its entire surface, drawing the odors down under the floor, and thence to the ventilating shaft. A positive requirement of this system is the entire separation of the ventilation of the building from that of the closets and urinals.

The Ventilation of Drury Academy, North Adams, Mass.

The system or method of ventilation applied to the building known as the Drury Academy, situated at North Adams, a report of which is given by Inspector Merriam, is, as I understand it, as follows: —

(Plate I.)

DRURY ACADEMY NORTH ADAMS, MASS.

Ventilated by the Mahony-Smith System.

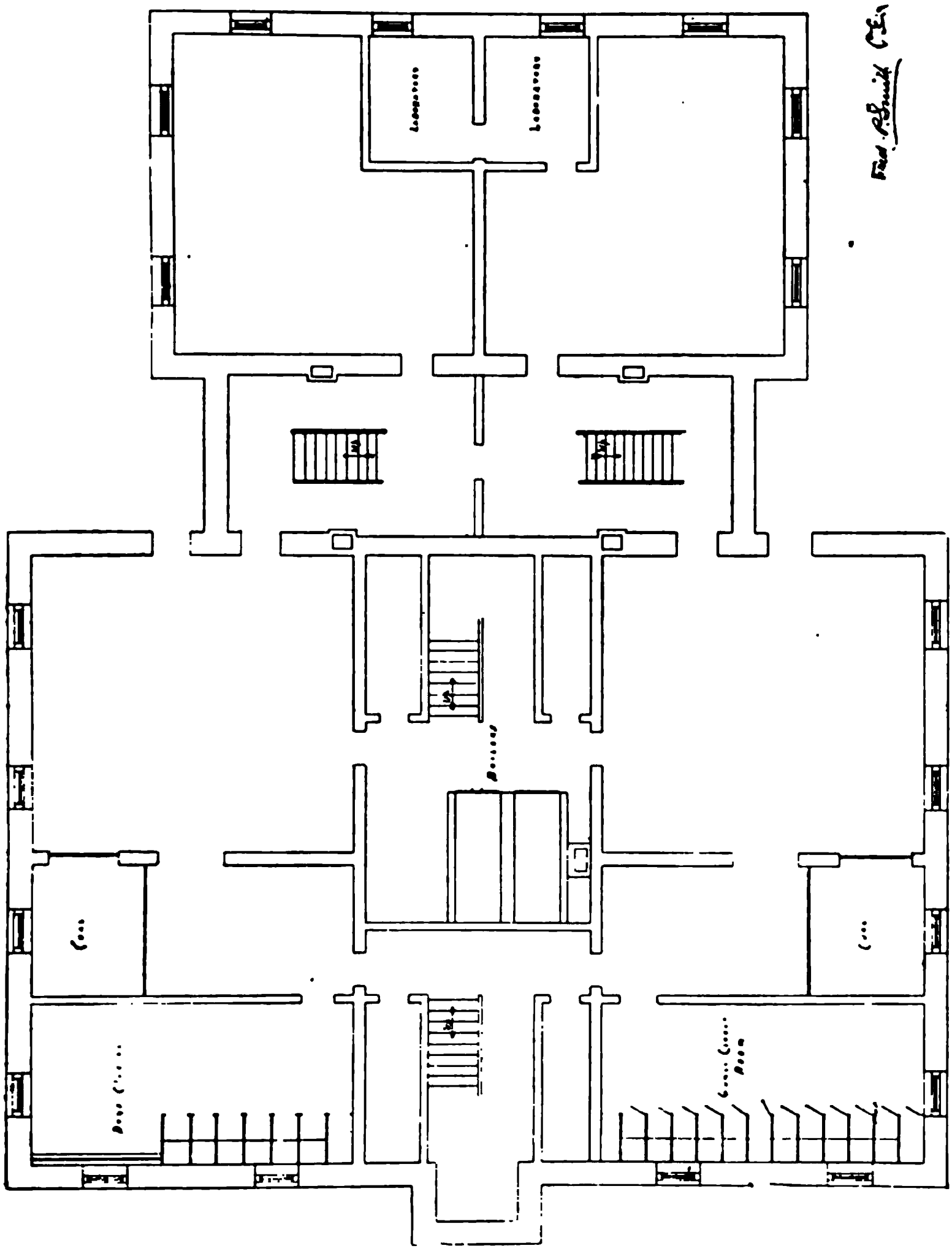


PLATE II.—DRURY ACADEMY, North Adams, Mass. Cellar plan prior to the introduction of the system of ventilation. See description, page 152.

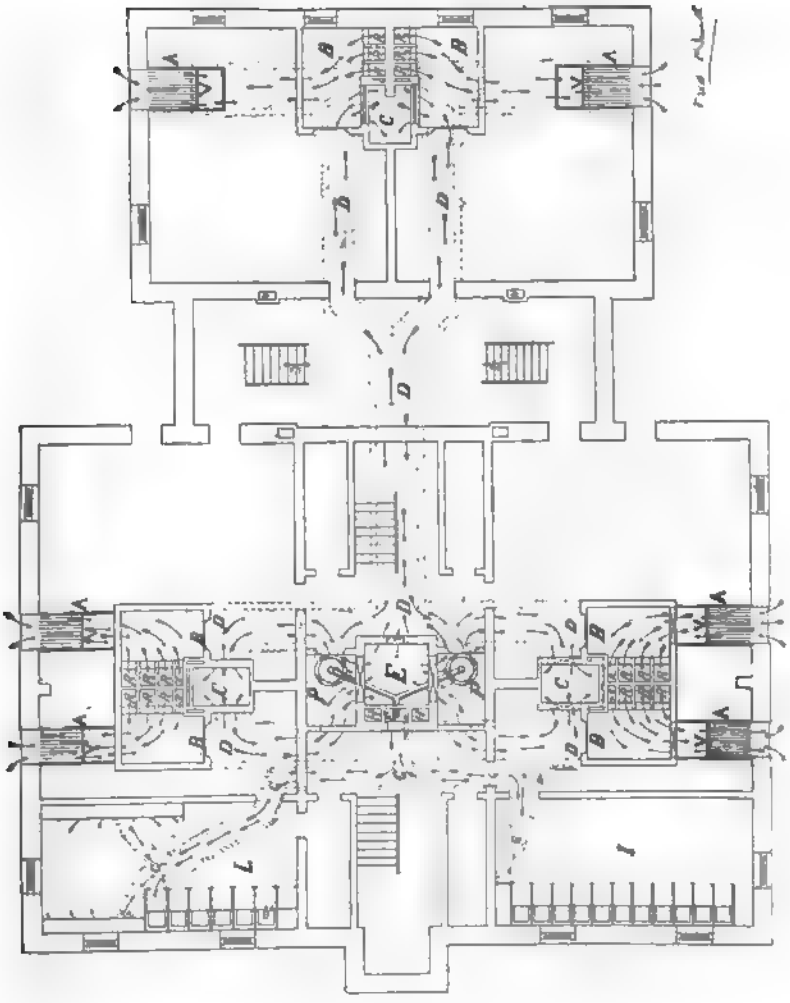


PLATE III.—DRURY ACADEMY, North Adams, Mass. Cellar plan with system of ventilation and warming. See description, page 162.

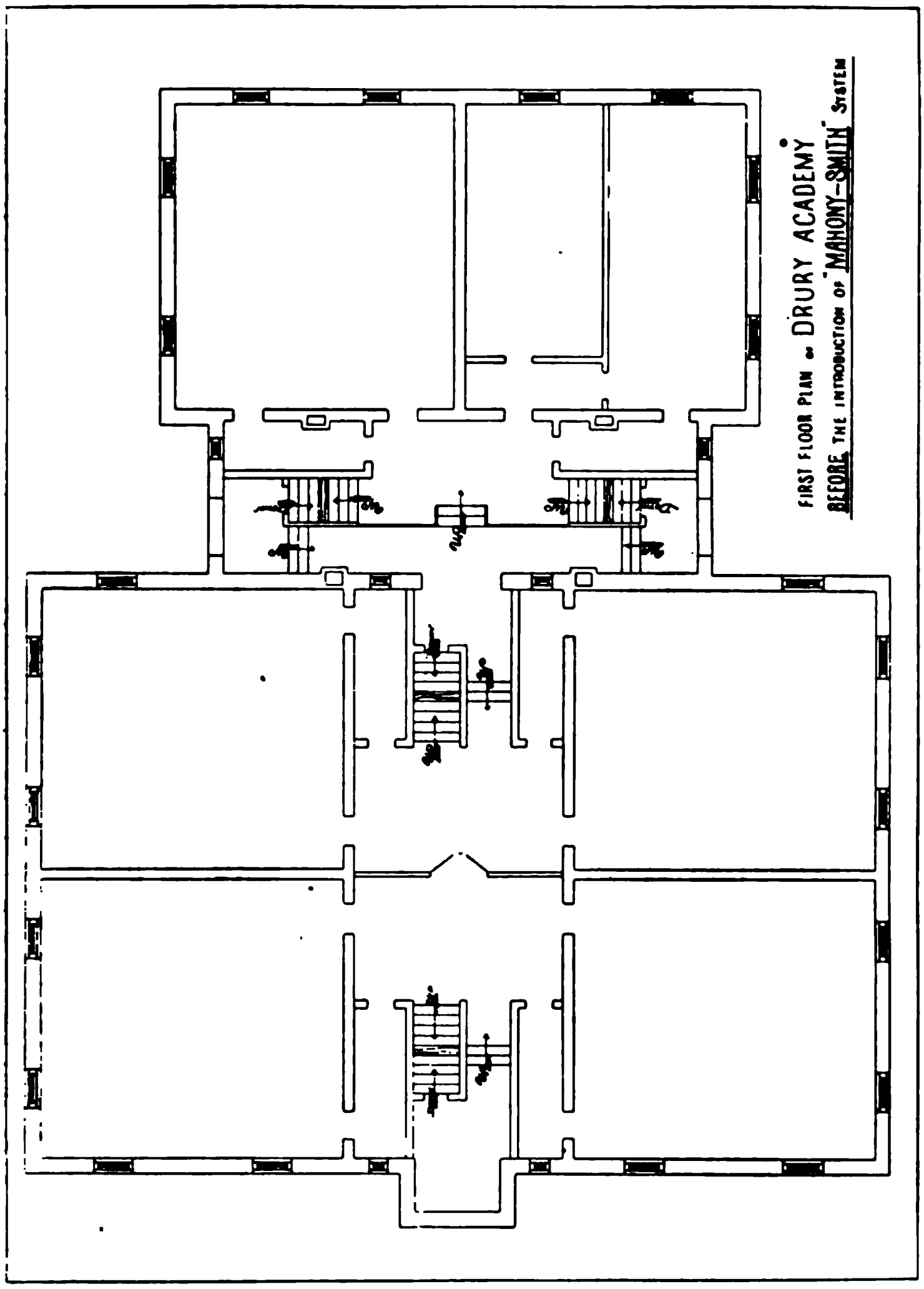


PLATE IV. — DRURY ACADEMY, North Adams, Mass.

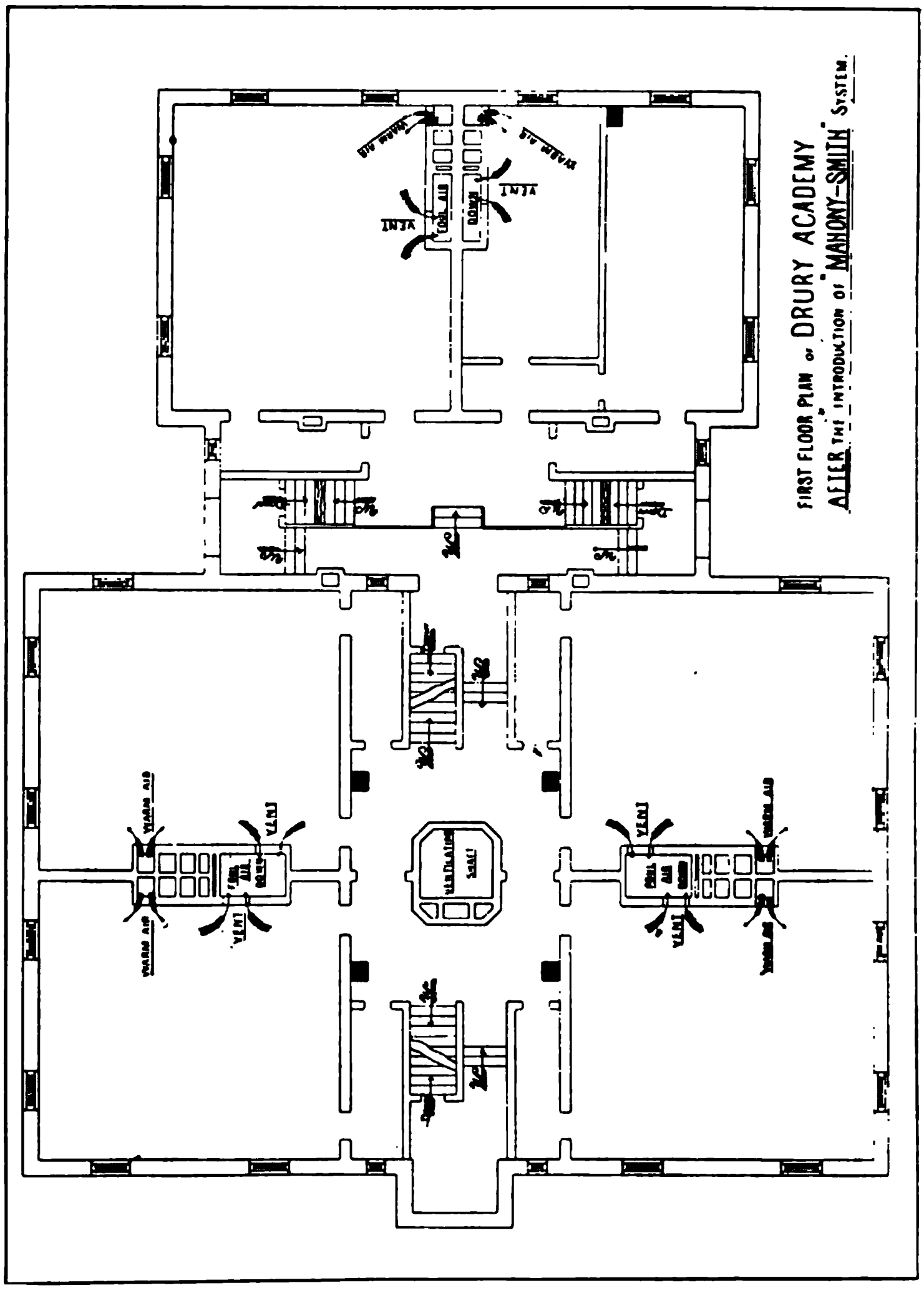


PLATE V.—DRURY ACADEMY, North Adams, Mass.

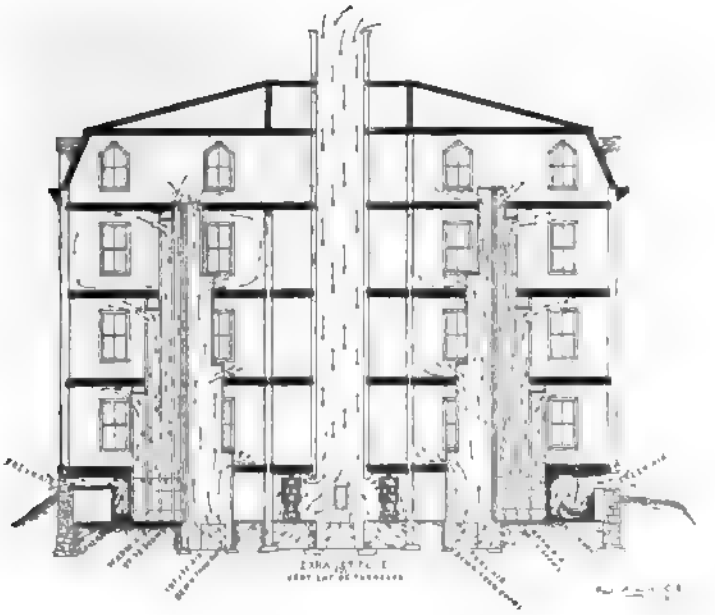


PLATE VI. — DRURY ACADEMY, North Adams, Mass. Section of building showing the system of ventilation. See description following.

The plates shown on pages 147, 148, 149, 150, and above, are illustrative of the system of ventilation and warming introduced during the summer at Drury Academy, North Adams, Mass., in compliance with the orders of the State inspector, F. W. Merriam, calling for improved ventilation.

Drury Academy is one of the largest public school buildings in the Commonwealth; containing the equivalent of twenty-two fifty-scholar rooms, and having nearly one thousand pupils in attendance.

The results contracted for required that the following conditions should be met: —

1. To introduce to each school-room not less than thirty cubic feet of fresh air per minute, for each pupil therein, or ninety thousand cubic feet per hour to each school-room.

2. To withdraw from each school-room a volume of vitiated air equal to the amount of fresh air introduced, without causing unpleasant or hurtful currents.

3. To ventilate the water-closets and urinals to the extent that no odors should at any time be discoverable therefrom.

4. To warm all the rooms at the same time, in any weather, in such a manner that the temperature at all parts of the room should be within five degrees of uniformity.

To secure these results, the entire steam-heating plant had to be removed, because the old boilers were not sufficiently powerful to supply the large amount of indirect radiating surface it would have been necessary to employ, to warm the necessary volume of fresh air required for ventilation.

An examination of Plate II will show the cellar plan, with steam boilers near the centre of main part. Comparing this plate with Plate III, will show the changes made in order to provide the necessary fresh and foul air flues, and the one large ventilation shaft. Referring to Plate III, A, A, A are the fresh-air inlets, at each of which are placed the automatic air governors, V, V, V, which serve to insure a uniform flow of air, unaffected by the winds. Passing through the governors, the air next enters the furnace rooms B, B, B, in which are located the air warmers, evidently designed with a special view to the warming of a very large volume of air to not much above the required temperature of the rooms. In each of the warm-air flues, R, R, R, there are two openings from the furnace room, from which the teacher may obtain the air at such temperature as she desires; the upper opening furnishing the warm air, and the lower opening the cold air, the supply being controlled by a mixing damper, operated from each room. The fresh air is admitted to the rooms at a point above the breathing line, and distributed evenly about the room; gradually falling, and being vitiated by breathing, it is withdrawn into the foul-air flues, C, C, C, and again carried down to beneath the basement floor into the ducts D, D, D, by the exhaust power of the ventilation shaft. At either side of the base of the ventilation shaft E are placed two very large ventilating furnaces, P, P, the heat from which furnishes the motive power for the exhaust system. From the shaft E the foul air is expelled to the atmosphere.

The room I contains the girls' closets, which are "Mott's

latrines," and have been in use a number of years. During the past season the local Board of Health ordered the removal of the closets from the building, because of the offensive odors emanating therefrom; but, to save expense, the old closets were retained, remodelled, and to-day are absolutely odorless, the change being due to the ventilation afforded by the closet vent flue F, adjoining the ventilating shaft E, and between the smoke flues H, H. The closet vent flue is always in operation, summer and winter, and is connected to the closets and urinals in rooms I and L by the ducts G, G, beneath the concrete floor.

The urinal in use was of slate, excellently built, and entirely covered with running water, but still very offensive. It was retained, however, rebuilt and ventilated, and to-day is perfectly odorless, though used by nearly five hundred pupils. Additional urinating facilities were supplied by the addition of a Mahony-Smith ventilated urinal, sixteen feet in length.

Plates IV and V show respectively the first-floor plans before and subsequent to the system, and plainly indicate the alterations made. Plate VI is a section of the main part of the building shown in Plate III through the fresh-air flues R, R, R, the foul-air ducts C, C, the furnaces P, P, and the main ventilation shaft E. The course of the air is from without, through the opening marked "fresh air," through the automatic air valve marked "governor," thence through furnace rooms (not shown) to flues marked "warm air up to rooms." Having been circulated thoroughly through the rooms, and served its purpose, it is withdrawn through flue marked "foul air down from rooms," carried to the basement, thence to the large shaft marked "exhaust flue," where it is rarefied by the ventilating furnaces shown, and expelled.

Record of Temperature in Class-rooms of Drury Academy, North Adams, as taken from Teachers' Records for School Week, November 4–8. (*F. W. Merriam, Inspector.*)

ROOM 1.

DATE.	MORNING SESSION.						AFTERNOON SESSION.				
	Time of Recording.						Time of Recording.				
	9	9.20	10	10.20	11	11.20	1.30	2	2.30	3	3.30
Nov. 4,	66	67	69	68	69	–	70	71	70	69	70
" 5,	68	69	70	71	72	–	70	69	68	68	69
" 6,	63	68	69	71	–	–	66	71	71	70	70
" 7,	64	66	66	68	69	–	70	71	71	70	–
" 8,	70	70	69	69	70	–	69	69	70	69	71

ROOM 2.

Nov. 4,	68	68	70	70	70	–	70	70	70	70	70
" 5,	69	69	70	70	70	–	72	72	70	70	70
" 6,	66	66	70	71	70	–	72	72	73	72	72
" 7,	68	68	70	72	72	–	70	72	74	76	76
" 8,	70	70	70	70	70	–	70	70	68	66	66

ROOM 3.

Nov. 4,	68	70	70	70	70	70	70	71	70	70	70
" 5,	75	75	74	72	70	70	70	70	71	71	70
" 6,	70	70	70	69	68	68	70	70	71	71	71
" 7,	70	70	71	71	71	71	70	72	71	70	70
" 8,	66	68	70	69	70	70	70	71	71	71	71

ROOM 4.

Nov. 4,	64	68	70	69	70	–	72	70	–	72	70
" 5,	70	70	72	70	70	–	70	72	74	70	70
" 6,	66	69	70	69	69	–	69	70	70	70	–
" 7,	68	70	–	69	70	–	70	70	72	70	–
" 8,	71	70	–	70	70	–	70	72	71	70	70

ROOM 5.

Nov. 4,	69	70	71	71	–	–	72	73	74	74	75
" 5,	70	72	–	71	–	–	69	70	70	69	69
" 6,	64	66	70	71	72	–	69	73	73	–	72
" 7,	62	64	64	65	68	–	69	71	73	–	73
" 8,	73	73	73	71	72	–	71	72	73	73	73

Room 6.

DATE.	Morning Session.						Afternoon Session.				
	Time of Recording.						Time of Recording.				
	9	9.30	10	10.30	11	11.30	1.30	2	2.30	3	3.30
Nov. 4,	63	69	–	66	70	–	70	70	71	69	69
" 5,	70	70	70	66	72	–	72	72	70	70	70
" 6,	64	68	68	69	–	–	69	66	70	70	–
" 7,	64	68	70	68	66	–	66	70	70	69	70
" 8,	69	70	70	70	72	–	70	69	72	–	–

Room 7.

Nov. 4,	67	68	70	71	69	69	70	71	74	69	70
" 5,	65	69	68	70	68	68	70	70	71	70	68
" 6,	63	64	67	70	68	69	68	68	68	69	68
" 7,	66	68	65	69	70	68	69	69	70	70	70
" 8,	69	65	68	68	68	68	68	68	70	70	68

Room 8.

Nov. 4,	68	[illegible]	68	68	68	68	68	68	70	72	74
" 5,	68	70	70	70	68	68	68	68	[illegible]	68	68
" 6,	68	68	68	68	68	68	68	68	70	70	70
" 7,	68	68	68	68	68	68	68	68	68	68	68
" 8,	68	68	68	68	68	68	68	68	68	68	68

Room 9.

Nov. 4,	–	64	70	–	70	–	–	71	71	72	71
" 5,	–	–	–	–	70	–	–	71	70	70	–
" 6,	68	70	70	69	–	68	70	70	70	70	70
" 7,	62	64	66	68	–	70	–	68	–	–	70
" 8,	65	68	70	–	71	–	–	–	69	–	–

Room 10.

Nov. 4,	68	70	70	72	72	–	70	70	72	72	70
" 5,	68	69	70	70	70	–	70	68	70	70	68
" 6,	66	68	68	70	70	–	70	68	70	70	70
" 7,	64	65	66	68	68	–	68	70	70	70	70
" 8,	68	70	70	70	70	–	72	72	70	70	70

Room 11.

Nov. 4,	68	68	68	70	70	68	70	72	72	72	70
" 5,	58	60	62	64	72	72	68	68	68	68	69

ROOM 11 — *continued.*

DATE.	MORNING SESSION.						AFTERNOON SESSION.				
	Time of Recording.						Time of Recording.				
	9	9.30	10	10.30	11	11.30	1.30	2	2.30	3	3.30
Nov. 6, .	64	66	68	70	70	68	72	71	68	70	68
" 7, .	68	70	69	70	70	70	68	70	70	68	68
" 8, .	72	72	72	70	68	68	68	68	70	72	74

ROOM 12.

Nov. 4, .	–	74	74	74	74	71	72	74	74	74	73
" 5, .	–	73	72	72	73	73	71	72	74	74	74
" 6, .	–	74	74	74	74	–	74	74	74	75	–
" 7, .	–	73	73	74	74	74	72	73	73	74	74
" 8, .	–	72	72	73	73	73	72	73	73	73	74

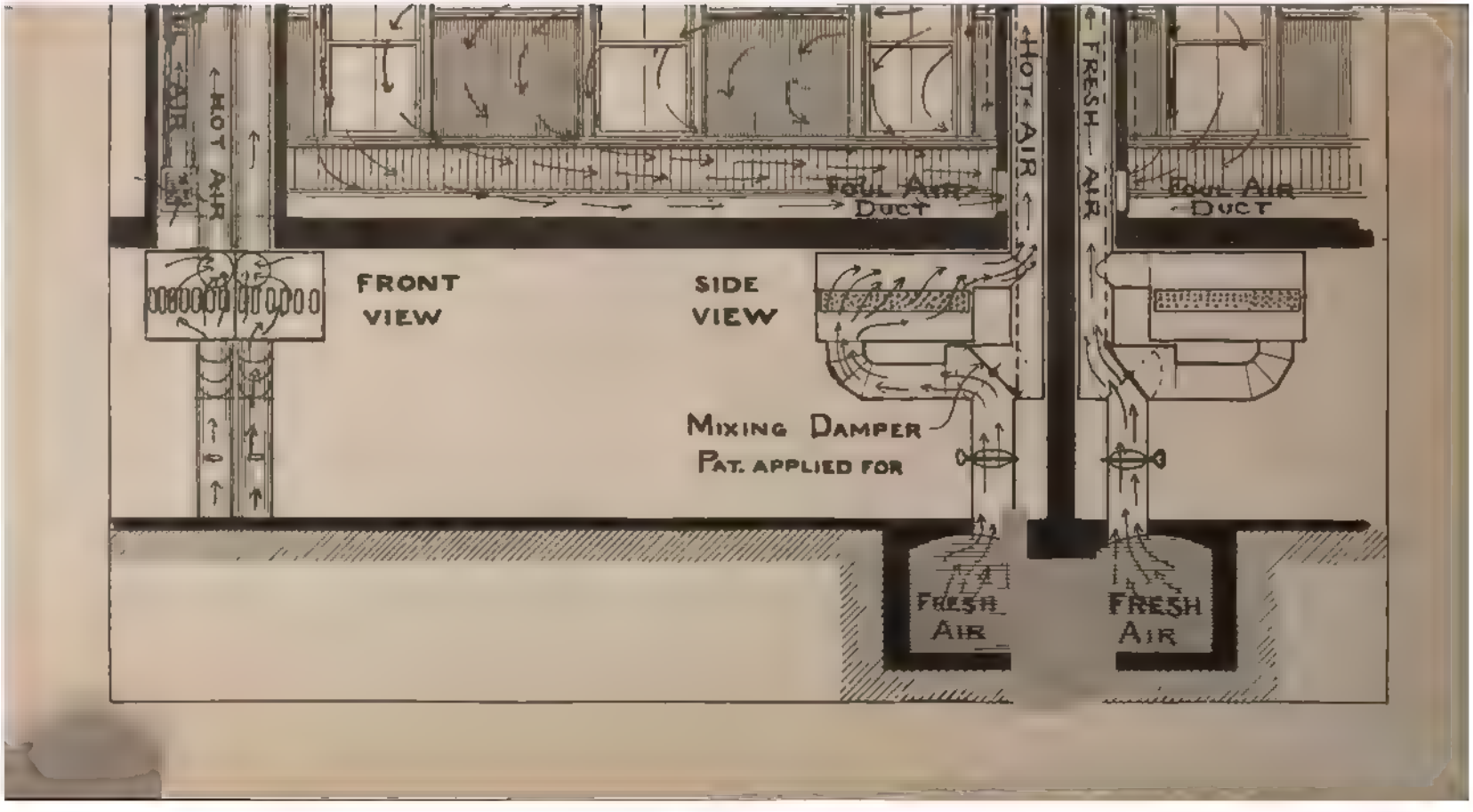
ROOM 13.

Nov. 4, .	62	62	68	68	68	70	–	72	74	74	72
" 5, .	64	68	68	68	68	70	68	68	66	66	66
" 6, .	62	64	64	64	66	66	–	66	68	68	70
" 7, .	64	66	66	76	66	–	68	70	70	70	70
" 8, .	64	64	66	67	68	68	68	70	70	72	72

ROOM 14.

Nov. 4, .	68	67	69	69	71	–	69	70	71	72	71
" 5, .	64	68	68	64	65	–	69	69	69	69	69
" 6, .	66	73	74	70	70	–	72	71	70	69	69
" 7, .	66	69	70	70	–	–	70	70	71	72	72
" 8, .	70	70	71	71	70	–	71	70	70	70	70

The cut on opposite leaf represents a heating and ventilating apparatus, as put in by A. A. Sanborn, 98 Milk Street, Boston. The heat is generated by a steam boiler located in the basement, the steam being passed over heating coils or stacks of indirect radiation suspended from basement ceiling. The apparatus, as designed for school-houses with an average floor area of 1,500 square feet per room, has two stacks of indirect radiation for each room; the heated or fresh air being introduced to the rooms through tin or galvanized iron pipes, 18 to 20 inches in diameter, two for each room, enter-


HOT AIR
HOT AIR
FOUL AIR
Duct
FRESH AIR
FOUL AIR
Duct
FRONT
VIEW
SIDE
VIEW
MIXING DAMPER
PAT. APPLIED FOR
FRESH
AIR
FRESH
AIR

ing same about nine feet from the floor with register face placed at opening. The stacks of indirect radiation in the basement are supplied with fresh air from outside of the building through galvanized iron air ducts, full size of fresh-air supply to rooms; viz., 18 to 20 inches in diameter.

In each duct is placed a mixing valve, which is operated by a chain and pull in the rooms; by opening the mixing valve the air is introduced under and through the heating coils or stacks, thence into the various rooms. If the rooms become overheated, the mixing valves may be closed, passing the air direct to the rooms without passing over heating coils or stacks, giving a full supply of cold, fresh air. By partially opening the mixing valve, the heated and cold air will be mixed, giving a full supply of air at a reduced temperature. The temperature of the rooms being controlled by the mixing valve, the air supply is constant at all times.

The ventilation consists of two extraction flues, starting from the bottom of each room, full size of hot-air flues, viz., 18 to 20 inches, with a register face or wire guard at the bottom, and a register near the top of room (the top register being for summer ventilation); each extraction flue being carried independently to the attic, and connecting with a chamber which is connected with a ventilator through the roof. The chamber with which the foul-air ducts are connected is supplied with a heating coil, to increase the velocity of air through the ducts.

The apparatus, as described, it is claimed, is capable of supplying the maximum amount of fresh air per pupil.

The Sturtevant System of heating and ventilating School-houses.

The general arrangement of the Sturtevant system of heating and ventilating, as applied to an eight-room school-house, is shown in the accompanying cuts. The apparatus is formed by the proper combination of a fan, an engine and a steam heater, all of special construction. The fan is designed to run noiselessly, and deliver a large volume of air with a small expenditure of power. The heater consists of a series of sections, each having a hollow cast-iron base, with spaces for steam and water of condensation. Into these bases are

screwed rows of vertical pipes, connected in pairs by cross pipes at the top, so that a thorough circulation of steam is always assured. Heaters of any size can be readily constructed by bolting together the requisite number of sections. The pipes are all of steel, and the heaters are all subjected to a hydraulic test of one hundred and fifty pounds per square inch. The entire heating surface is encased in a steel-plate jacket, connecting with the fan.

The apparatus is usually placed in the basement, as shown in cuts, and steam is supplied by a boiler of suitable construction. The exhaust steam from engine is utilized in the heater. The action of the entire apparatus is rendered automatic, by the use of automatic water-feeding and damper-regulating devices.

The casing of the heater is so constructed, in connection with a double system of air-supply ducts, that cold air can be forced through one system and hot air through the other. A hot and cold air duct communicates with the base of each of the upright flues in the walls, and dampers are so arranged that the temperature of the air admitted to any room may be instantly changed at will, without changing its quantity or in any way affecting the admission of air to any other rooms. It is claimed that the control of the entire system may be placed in the hands of a single individual, or it may be directly controlled by the occupants of the rooms. Where absolute equality of temperature is desired, thermostats are employed in the various rooms, to govern the temperature of the rooms by direct action upon the dampers.

This arrangement of hot and cold air ducts does away with the use of indirect steam coils at the base of each flue, with their attendant expense and inconvenience, and centralizes the entire heating system in a single steam-pipe coil, in a fire-proof jacket; greatly reduces the heating surface and the number of valves, and renders the entire system capable of ready and instantaneous control. The amount of air admitted to the rooms is regulated in the usual manner by the inlet registers, although a wire screen may be substituted for the register face, and a cut-off damper in the flue may take the place of the register valves. The inlet flues are placed or built in the interior walls. Separate flues communicate with

each room, so that it is rendered entirely independent of the remainder of the building. Air is admitted to the room from these flues at eight to ten feet above floor level, and finally escapes through the wall ventilating registers, close to the floor and nearly beneath the inlet registers. The arrangement of apparatus and flues, the positions of registers and the direction of air currents, are indicated upon the cuts. Air is taken from above the roof through a brick stack, the exhaustive action of the fan serving to draw downward a full supply. The further action of the fan in forcing this air through the ducts causes a plenum condition within the building; the air is under pressure, and seeks an outlet at every point. Likewise the current of air will be outward through open windows. The readiest opportunity for escape being through the ventilating registers, the pressure within the room causes a rapid and positive discharge of air through them. The letters H and V indicate respectively hot-air inlets or flues, and ventilating outlets or flues.

The ventilation from water-closets in basement is accelerated by the heating action of the boiler smoke flue, on either side of which the ventilating flues run to the top of the chimney. The other vent flues are united in the attic, and connect with ventilators on the roof.

By the use of a moistening device in the main duct from the heater, the humidity of the air may be regulated at will.

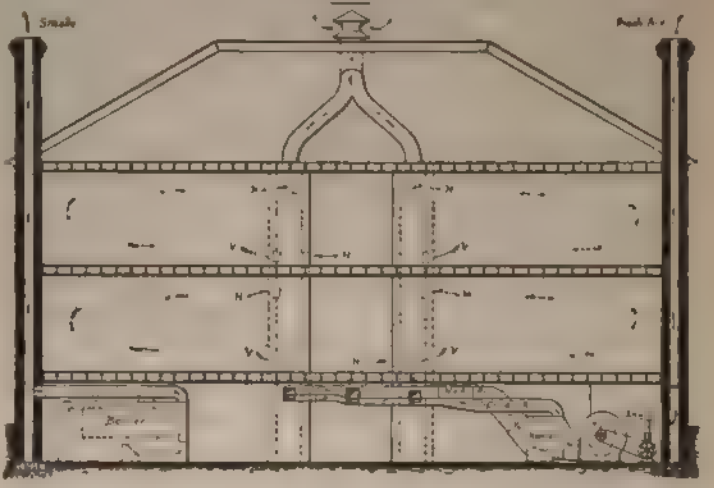
There are no isolated radiators; the action of the entire apparatus is regulated by a few valves, and these are located within a few feet of each other.

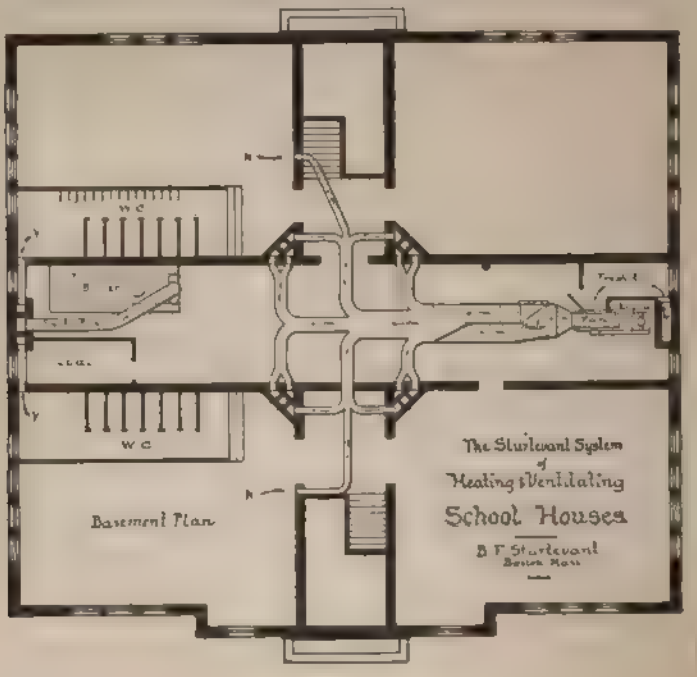
The quality, quantity and temperature of the air admitted to any room can be instantly changed, without reference to the requirements of the remainder of the building.

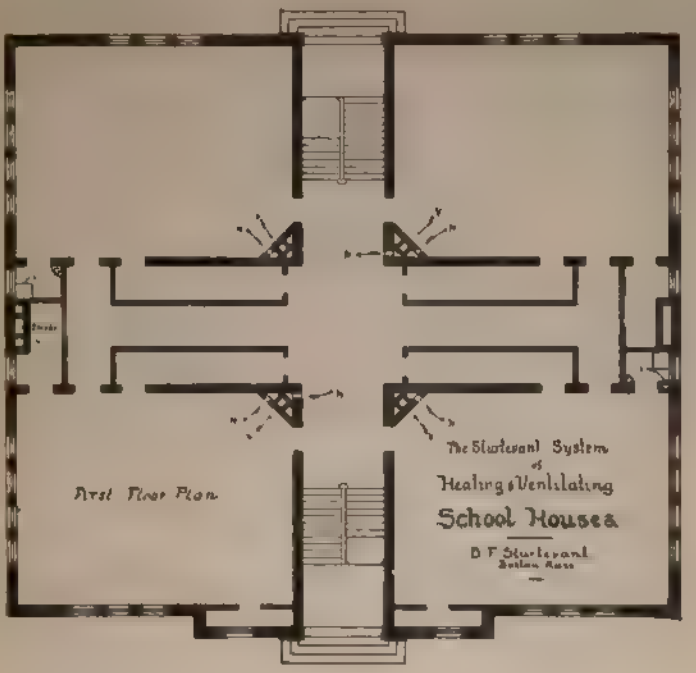
As the ventilating capacity of the system depends solely upon the size of the fan employed, it is a simple matter to meet the most exacting requirements as regards ventilation. It is a peculiar feature of the fan blower, that, as the air admitted to the rooms is shut off, the fan automatically reduces the amount discharged, and the power is correspondingly reduced.

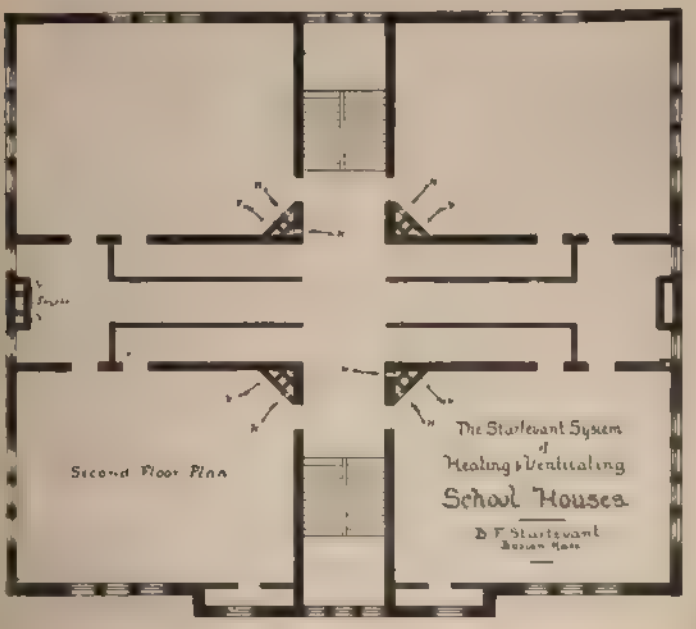
The Sturtevant System
of
Heating & Ventilating
School Houses.

B F Sturtevant,
Boston Mass.

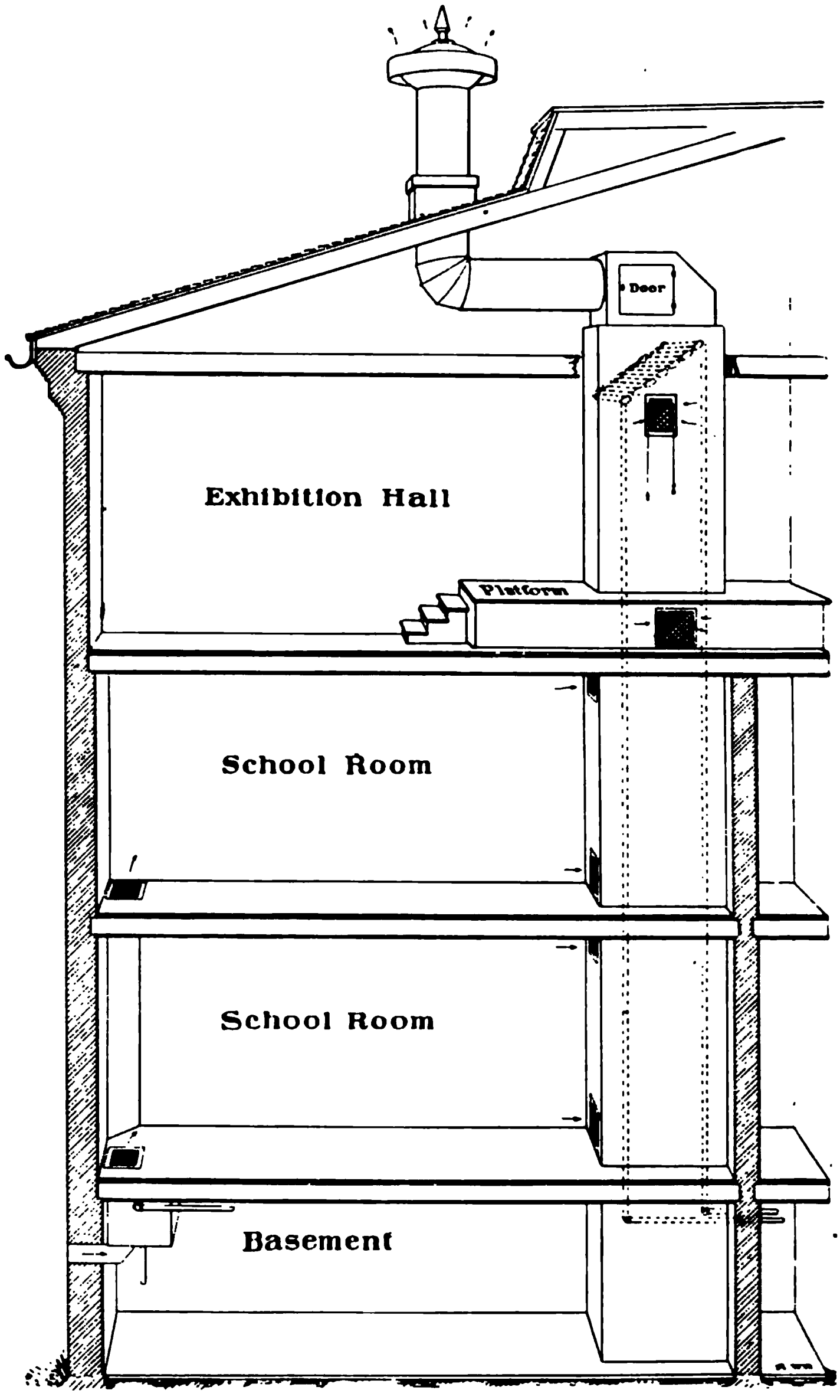





First Floor Plan
The Sturtevant System
of
Heating & Ventilating
School Houses
B F Sturtevant
Boston Mass


Second Floor Plan
The Sturtevant System
of
Heating & Ventilating
School Houses
B F Sturtevant
Boston Mass

Walker-Pratt System of Heating and Ventilation.



The accompanying cut shows the arrangement of heating and ventilating apparatus in the Gaston school, South Boston. The school-rooms are heated by indirect radiation, each room

having two 16 by 24 inch registers for the admission of warm fresh air. For the discharge of vitiated air each room has a 16 by 24 inch register at the ceiling, and a 16 by 24 inch register face at the floor. The upper register is kept closed except in summer, or at times when the room is too warm.

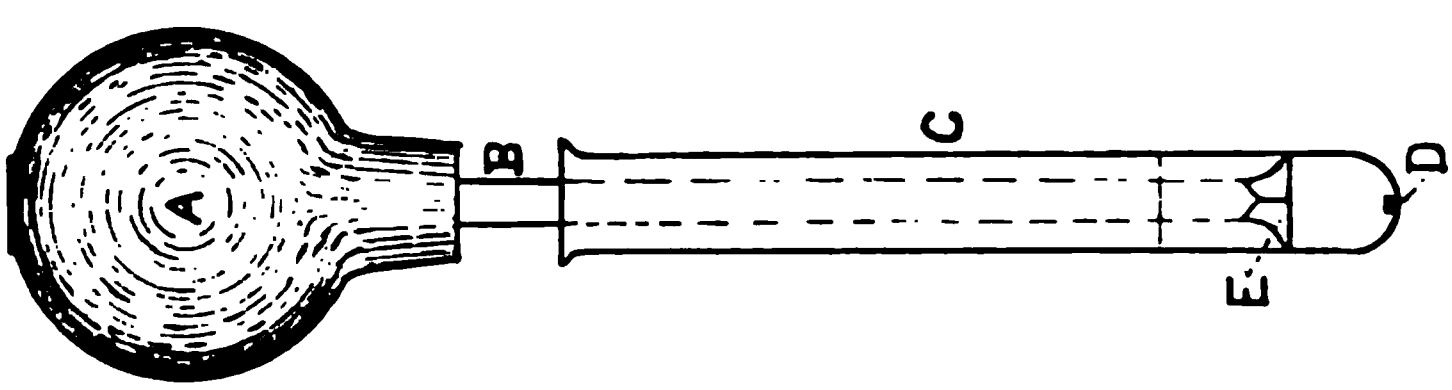
The ventilating registers open into a brick ventilating shaft, which discharges into a large sheet-iron pipe, passing up through the roof. Better results would be obtained if the shaft were carried vertically through the roof; but in this case the construction of roof made it necessary to adopt the plan shown. The upward current of air in the ventilating shaft is accelerated by a coil of $1\frac{1}{2}$ inch pipe, placed just above the upper register.

This building was inspected Dec. 6, 1889, with the following result: —

A double set of windows is provided for the building, and, with their aid in ventilating, Wolpert's air tester gave, in several rooms, 7.7, 8.3 and 8.7 parts carbonic acid in 10,000; with windows and doors to hall closed, just after beginning of session, gave 9.5 parts; and near the close of the session, under the same conditions, gave 14 parts carbonic acid in 10,000.

Method of Ascertaining the Quantity and Quality of Air in Inhabited Apartments.

In making tests of the quality of the air in school-rooms or other inhabited apartments, Professor Wolpert's air tester has been used by the inspectors. While it is not absolutely essential for our purposes to obtain the strictest accuracy in determining the quality of air in any given apartment, yet, in testing the quality of air, this little instrument has been found, when compared with scientific analysis of air, to be practically all that is required for our use.



This instrument consists of a simple rubber bulb (A), of a capacity of 28 cubic centimeters, a glass outlet tube (B), with a constriction near its extremity (E). A glass test tube, 12 centimeters in length (C), and 12 millimeters in diameter, has a horizontal mark near the bottom, indicating the point to which it must be filled with perfectly clear lime-water, to contain 3 cubic centimeters. The bottom of the tube is whitened, and has a black mark stamped upon it (D). A small wooden stand, a brush or swab, a vial of vinegar for cleaning the tube, and a bottle of clear lime-water, completes the outfit.

In addition to the air tester, Cassillor's or Hick's anemometers have been used, to determine the quantity of air supplied to or extracted from the buildings or school-rooms. Great care has been taken to have these instruments correct, the correction for the standard one kept at this office having been certified to by the United States signal officer at New York.

Reports of Accidents in Manufacturing Establishments.

Pursuant to the requirement of the statute relating to these accidents, I have prepared, as minutely as possible, a detailed statement of these reports, with reference to the causes leading to the same, and the injuries resulting in the several cases, which latter are given in a general way, together with such additional facts as have been presented in connection with this subject. From the reports sent to this office during the year, it will be seen, that while, in some cases, the number varies but little from that of a year ago, in others there is a marked reduction in the number of casualties, which is gratifying. The statute which relates to these accident reports has been in effect since July 1, 1886, and is as follows: —

[Chapter 260, Acts of 1886.]

An Act relative to reports of accidents in factories and manufacturing establishments.

Be it enacted, etc., as follows:

Section 1. All manufacturers and manufacturing corporations shall forthwith send to the chief of the Massachusetts district

police a written notice of any accident to an employee while at work in any factory or manufacturing establishment operated by them, whenever the accident results in the death of said employee, or causes bodily injury of such a nature as to prevent the person injured from returning to his work within four days after the occurrence of the accident.

SECT. 2. Any person or corporation violating any of the provisions of section one of this act shall be punished by a fine not exceeding twenty dollars.

SECT. 3. The chief of the Massachusetts district police shall keep a record of all accidents so reported to him, together with a statement of the name of the person injured, the city or town where the accident occurred, and the cause thereof, and shall include an abstract of said record in his annual report.

SECT. 4. This act shall take effect on the first day of July in the year eighteen hundred and eighty-six.

There were seven hundred and two cases of accident reported during the past year, in which seven hundred and eight persons received injuries. In each of three accidents reported, more than one person was injured. An accident by the breaking of an elevator cable, letting the car drop about eight feet, caused injuries to four men, who were riding on the car. By the bursting of a hydro-extractor, one person was killed and two others were more or less injured. Another accident occurred, where two men were injured who were engaged in adjusting a belt.

Nineteen fatal accidents occurred. Of this number, six were killed by being caught on the main shafting, two were killed by cylinder paper-making machines, and one in each of the following cases: falling into main speed gear, breaking of hatchway rope, circular saw, struck in the side by a broken bolt, bursting of iron pulley, by being caught in mule carriage, dropping of elevator car, bursting of hydro-extractor, falling through elevator well, being drawn in between rolls of a gig machine, and being drawn in between rolls of a stretching machine. Farther on in this report will be found the details in each of these cases, as far as they could be ascertained by careful investigation of the attendant circumstances.

An examination of the list of injuries sustained will show, that, of the entire number of persons injured (seven hundred

and two), there were three hundred and ninety-three, or more than fifty-five per cent. of the whole number, whose injuries were confined to the hand, including the thumb and fingers. If we deduct from the whole number injured the number of those who did not receive their injuries in operating machinery, or by the elevators, shafting, belting, etc., those who met with accidents by falls, and from the innumerable causes incident to ordinary labor (the latter thus reported exceeding two hundred), we find that about eighty per cent. of the number sustaining injuries while operating machinery of every description, received such on the hand, thumb or fingers. About one-fourth of the injuries of this nature (to the fingers) resulted in partial loss of the member.

There is another fact in connection with the record of the accident reports for this year, which, it seems to me, should be mentioned here, as showing that a large proportion of these injuries might have been averted, had reasonable care and the ordinary caution only been exercised on the part of those persons whose cases I am about to mention. I allude to the large number who met with injuries *while attempting to clean the machinery they were operating while the same was in motion; or in attempting to oil said machinery, or pick off waste or other matter, which had lodged in some part of the machine, without first stopping the same for the purpose. There were one hundred and thirteen persons*, according to the reports received, *who were injured in this manner; nearly one-sixth of the entire number, or more than sixteen per cent.* In these cases the operatives were acting in direct violation of the rules, which prohibit the cleaning of machinery when it is in motion, or attempting to remove from the same waste or other matter, without stopping the machine. It is unfortunate that such has been the case; that these persons should incur such risks for the sake, perhaps, of gaining a little time, or of running off a little more work. The female portion of the help seems to have suffered the most in this way, and gearing seems to have been the immediate cause in most of the cases. Of course, under such circumstances, safeguards are of little avail; as due care is necessary in any event, whatever may be the means used or adopted for the protection of life or limb.

While, in the greatest number of the cases which are reported, the facts are very clearly stated, giving the names of the persons injured, and the time, place and cause of accident, complying with the law as fully as possible, yet there are a great many reports received which do not contain all the information necessary under the statute; in many cases not stating the cause, and in others not giving it as definitely as required. Of course, in these latter cases, the persons sending the reports are written to for further facts regarding the accident, and, almost invariably, the same is furnished by them; showing that, while there may have been a lack of information on their part regarding the law, at the same time they were ready to comply with its provisions, when fully informed of their nature. It seems to me, therefore, in view of the possible construction which many may place upon this law, that, if the statute were so amended, requiring the immediate cause of accident to be stated in the report, in such a way as would indicate the exact kind of machinery on which the injury was received, and the nature of the injury thus sustained, so far as it could generally be determined, it would remedy this matter fully, and, I think, would be of great benefit in the future.

The following list gives the number of persons injured, and, in most of the cases, the nature of the injury. Like the number last year, a very large percentage of the injuries were slight, and all of those not enumerated are of that kind: —

Fatally injured,		19
Injury to arm,		78
In twenty-four cases the arm was broken,	24	
four cases the arm was amputated (two cases, right arm),	4	
one case, amputated in part,	1	
five cases, fractured,	5	
Wrist injured,		20
In eight cases, wrist was broken,	8	
two cases, wrist was sprained,	2	
two cases, wrist was dislocated,	2	
Shoulder injured,		7
Shoulder-blade broken,	1	
Shoulder dislocated,	1	
Collar-bone broken,		2

Injury to hand,		74
In five cases, the hand was amputated (two cases, right hand),	5	
four cases, the hand was crushed or lacerated,	4	
one case, the bones were fractured,	1	
Injury to fingers,		266
In seventeen cases, one finger was amputated entire,	17	
fifty-three cases, one finger was amputated in part,	53	
four cases, two fingers were amputated entire,	4	
twelve cases, two fingers were amputated in part,	12	
two cases, three fingers were amputated entire,	2	
two cases, three fingers were amputated in part,	2	
three cases, four fingers were amputated entire,	3	
ten cases, one finger was broken,	10	
sixteen cases, the nail was torn off,	16	
Injury to the thumb,		53
In eight cases, the thumb was amputated entire,	8	
eight cases, the thumb was amputated in part,	8	
six cases, the thumb was broken,	6	
Injury to the leg,		46
In fifteen cases, the leg was broken,	15	
one case, the left leg was amputated (caused by a falling wall),	1	
four cases, the leg was either scalded or burned,	4	
one case, the knee pan was broken,	1	
one case, the left leg was amputated, in part,	1	
Injury to the ankle,		11
In nine cases, the ankle was sprained,	9	
two cases, the ankle was broken,	2	
Injury to foot,		62
In two cases, the foot was crushed,	2	
twelve cases, the toes were crushed,	12	
eight cases, the foot was scalded or burned,	8	
Injury to the hip,		5
(In all the cases, the bone was either broken or fractured.)		
Injury to the head,		28
In ten cases, the eye was injured (one case, the eye was lost),	10	
eight cases, scalp wound,	8	
one case, slight fracture of the skull (caused while attempting to adjust a belt),	1	
Injury to rib,		2
(In one case, one rib was broken; in one case, two ribs were broken.)		
Injury to the back and side,		14
(In one case, the spine being injured.)		
Injury to the abdomen,		3
Two persons were ruptured, one by falling with elevator car, and one by falling from window-sill onto edge of box,		2

There were 585 males and 123 females who were reported as injured. The more dangerous and hazardous work has, of necessity, to be performed by men; and the greater risks thus taken render, of course, greater the liability to accident; hence the large proportion of males injured.

In the rolling mill of a wire works, a red-hot wire, shooting across the iron floor, caught a piece of rod, also hot, which had been broken from a previous rolling, and threw it into the air, whirling rapidly. This rod was about four feet long, and in descending struck a boy who was employed in the place, the rod entering the right side of his nose, coming out about an inch from his nose, on the left side of his face. The rod was promptly cut and drawn out, and the boy was taken to the hospital for treatment.

A most fortunate escape from a fatal result was that of a man who was working about the shafting, when his clothing was caught on the same, and he was drawn up and around the shaft once, causing all his clothing to be stripped from his body. His right side and arm were badly bruised, but, remarkable as it is, no bones were broken, and he was not, apparently, otherwise injured.

Another case of a most remarkable escape from serious injury was that of a man who was employed in the engine room at one of the cotton factories. While wiping the engine, and standing between the connecting rod and the frame of the engine, he tried to get on the other side; but the rod, coming back on the inward throw, lifted him off his feet and drew him backward toward the cylinder, and then, rising on the upward stroke, jammed his left side between the rod, and top of cross-head slides, and then threw him to the floor. He received bad bruises and was badly shaken up, but escaped further injury.

There was another case in a wire works, where one of the employees, while passing in front of the pipe which conveys the rod from one section of the rod-mill to the other, two rods coming through the pipe in quick succession, was struck by the second rod, which was about five-sixteenths of an inch thick; and about eighteen inches in length of this rod passed through his foot, just below the ankle. He received quite a

severe injury, but the physician in the case did not consider it a necessarily dangerous wound.

In one case, a man was stooping over a revolving shaft, and came in such close proximity to the same that his beard was caught by the shaft and pulled out by the roots, causing, of course, the most excruciating pain and suffering.

A female employee was injured by the breaking of a pulley, which was attached to the main shaft. Two new ropes had been put on the main shaft, and, in starting up, the tension was too strong, causing the breaking of the pulley, bending one section of the main shaft and tearing the hanger from the ceiling. Miss Mary Collins (the person injured) was walking underneath at the time, and was struck by the flying pieces of the hanger. She received a bad cut on the head, and her back and shoulders were severely bruised.

A case of accident to an elevator car was caused by the breaking of the cable. On the car at the time were four men, one of whom had his spine badly injured, and another his foot sprained. The two others were not seriously hurt. The elevator car dropped about eight feet. An examination of the elevator failed to reveal any defect, and the theory is that the safety device did not have time to work.

The causes of accident, as seen by the list which follows, are many, and as varied as ever. Many of those cases, not occurring through the operation of machinery, are not here enumerated; except where a considerable number were from the same or similar cause, such as in the case of accidents by falling, in moving machinery, etc. Undoubtedly many cases reported did not come within the statute; but, nevertheless, they have all been filed with the others, and recorded in like manner. The list is here given: —

Injured by machinery in cotton, woollen, paper and shoe factories,		272
	gearing,	86
	belting, shafting and pulleys (eighteen of these were injured while shifting or repairing belts),	29
	planing and moulding machines,	14
Injured by lathes,		11
	circular saws,	14
	elevators,	37
	while riding on elevator, and getting hand or foot caught between car and flooring,	21

Injured by elevators — *concluded.*	
by jumping onto elevator, when it was in motion,	3
by dropping of car (one case causing injuries to 4 persons),	5
were struck by descending car,	2
by falling through elevator well,	6
Injured by falling through hatchways or hoistways,	6
falling from ladders and staging,	20
while handling mechanical tools,	8
burning (in most cases by molten iron),	12
scalding,	14
falling of articles of heavy weight (in most cases injury to the hand or foot),	28
while removing machinery and other articles, and working about cars,	18
belts and pulleys breaking, and falling,	8
slipping, and falling on floor, or against some machine or other object,	24
falling into wheel pits,	3
derricks and in stone quarries,	7
flying steel, 3; flying shuttles, 2,	5
falling on stairways,	3

The injuries caused by gearing have been mentioned separately in the foregoing table; but, in the greatest number of the cases, the gearing was connected with and formed a part of the machine which was operated.

The cases which, from the circumstances attending them, seemed to require investigation, I give below, with such facts in each instance as the inspectors, from careful examination, could elicit. The fatal cases are included in the number.

Charles E. Reed, Boston. New England Piano Company. Date of accident, Jan. 22, 1889. This was a fatal accident. While at work at a circular saw, a piece of board about eight inches long, six inches wide and two inches thick, which he was sawing, slipped from his hands and fell on the saw, which threw it with great force, striking him directly over the heart, killing him instantly. The deceased was a resident of Gardiner, Maine, and had been in the employ of the establishment only three days.

Henry Goss, Westborough. Gould & Walker's shoe factory. Date of accident, Feb. 14, 1889. This accident was caused by shafting, resulting in loss of the left arm. While attempting to put a belt on the upper pulley, connecting the belt with the pulley

of a sole-leather racing machine, his hand became entangled in the belt, pulling him over the shaft, around which he was carried twice, and then thrown to the floor. His arm was twisted off near the elbow, and the muscles of the arm and shoulder were pulled out, leaving the arm on the shaft when he dropped to the floor. Another portion of the arm was afterwards amputated, and he was reported as doing well, and in a fair way to recover, though he suffered terrible injury.

JOHN KELLY, Boston. James Russell & Co., boiler works. Date of accident, Feb. 21, 1889. This accident was a fatal one. It occurred while a heater, for heating water to supply a steam boiler, was being tested. The heater shell was 48 inches in diameter and 110 inches long, of $\frac{7}{16}$ inch steel, double riveted, with a cast-iron head at each end, drilled to receive the tubes, over which there were other solid cast-iron heads, to make the whole tight, and which were fastened to a heavy flange by thirty-eight one-inch bolts, held by nuts. These heads were further secured by four one and one-half inch bolts, near the centre, and passing through the heater from one head to the other, and held by nuts on the outside. At a cold-water pressure of two hundred and forty pounds, one of these long bolts was pulled apart, about six inches from one end, the springing of the cast-iron heads throwing or forcing the long part of the bolt some ten feet, striking Mr. Kelly, who was just then passing the end of heater, on the right side, just below the breast, and with such force as to fracture his ribs, and to cause his death the next day. It was a singular accident, and seemed unavoidable. The same bolts had before stood a test of two hundred and seventy-five pounds, and no sign of weakness could be discovered in the bolt.

GEORGE THOMPSON, Boston. Benjamin Randall, fertilizer works. Date of accident, Feb. 28, 1889. The injured man had charge of a steam tank with a movable bottom, for treating fertilized matter, and was employed at night-time. After a certain time the steam is shut off from the tank, and the matter therein reduced by this means to gelatine. At the time of this accident the man supposed that the steam had been shut off for the twelve hours previously; but, when the nuts were loosened to remove the bottom, the steam and boiling gelatine were expelled with considerable force, badly scalding him about the face and neck. He was removed to the hospital and comfortably cared for. His failure to shut off the steam properly, in the first instance, caused the accident.

Adolph Grahm, Lowell. Lowell Bleachery. Date of accident, March 6, 1889. This was a fatal case, and was caused by the shafting. Mr. Grahm was a carpenter, and was employed in the repairing department. He was engaged in taking measurements between a brick wall and a revolving shaft. His clothing was caught on the shaft, and he was drawn up and carried around it several times, the clothing being stripped from the upper portion of his body, and he was thrown with terrible force against the wall, his brains being dashed out, and his body otherwise horribly mangled. He was undoubtedly killed when his head first struck the wall. He was sent to do this work during the noon hour, when the machinery would be stopped. Had he waited two or three minutes longer before attempting the work, the accident would not have happened, as it was then about the point of noon-time.

Charles Rose, Jr., Worcester. Coes Wrench Company. Date of accident, March 14, 1889. This accident occurred in the blacksmith shop of the company, where there is a machine called a "heading machine," used for pressing out the heads of the wrenches. Directly in rear of this machine are two gears, one of which is about three feet in diameter, and connected with another nearer the floor, about eight inches in diameter. The man went to the rear of the machine to examine the dies, and, while stooping over, his clothing was caught in the gears, pulling him backward and drawing his arm in, mangling it in a frightful manner. It was necessary to amputate the arm at the shoulder. The injured man admitted to Mr. Coes, the proprietor, that the accident was due to carelessness on his own part.

J. Frank Hubbard, Holden. Austin's saw-mill. Date of accident, March 15, 1889. This was another case of fatal accident. It occurred in the basement of the mill, where Mr. Hubbard had gone for the purpose of grinding planer cutters. At the time of the accident he was alone in the basement, and therefore the exact particulars cannot be had. Mr. Austin, the owner of the mill, and another man, were at work on the floor above, and their attention was first attracted by the sudden stopping of the machinery. Hastening to find the cause, they went to the basement, and found Mr. Hubbard's body caught in the main gear on the flume. When he was reached, there was no sign of life. It would appear, from all the circumstances attainable, that, while attempting to let on more water for grinding the tools, and by using a lever to do so, he probably got upon the flume or bulkhead, which is about three

feet above the floor, and which would bring his neck about on a line with the gears. His lever, slipping, caused him to be thrown into the gears. This is the most likely theory. His neck was found to be broken, and of course he was killed instantly.

Dennis Hayes, Gardner. Heywood Bros. & Co. Date of accident, March 30, 1889. This, too, was an accident having a fatal result, and was caused by a fall through a hatchway. Mr. Hayes was foreman of the storehouse department, and was letting down chairs from the third floor and through the hatchway, by means of a tackle block fastened to a beam above by ropes. It seems he was in a hurry to get home, as his wife was sick, and, instead of going down the stairway, he attempted to let himself down by the rope with the chairs. The additional weight caused the rope which held the block to break, and he fell to the first floor, causing his death almost instantly.

Alexander Auther, Lawrence. Munroe Felt and Paper Company. Date of accident, May 9, 1889. Another fatal accident, and caused by paper-making machinery. He was employed as a helper on a cylinder paper-making machine. The person having charge of the machine was on one side, and Mr. Auther was on the side opposite. No one knows exactly the way in which he was caught in the machine, but it is the supposition that, in endeavoring to adjust some portion of the material then passing through the machine, he stepped onto a pipe about a foot above the floor, and reached between two sets of cylinders, which are placed one above the other, the space between the two sets being about two feet, for the purpose of arranging this material. The probability is that his feet slipped from the pipe on which he was standing, thereby throwing his hand forward and drawing his arm in between the cylinders. The arm was drawn in the entire length, and his shoulder also, causing his neck to be broken, and killing him instantly. It seems that others have been caught in this way before, but they succeeded in extricating themselves before much injury could be done. It is one of those machines to guard which it is hardly possible, and at the same time have the machine perform its work in a proper manner.

Charles Bedard, Worcester. H. O. Hudson & Co. Date of accident, May 15, 1889. This accident was another one having a fatal result. It was the case of a man who was operating a machine used in the manufacture of leather belting, and called a "stretching machine." In some way his hand was caught in the

rolls of the machine, drawing his arm in, and injuring it to such an extent that it was considered necessary to have it amputated near the shoulder; but, nevertheless, the injuries were such that he died a few days after the accident.

MICHAEL BARRETT, Worcester. Washburn & Moen Manufacturing Company. Date of accident, June 26, 1889. This was the case of a boy between sixteen and seventeen years of age. He was engaged in oiling the bearings on the continuous rod mill. His duties were to oil these bearings after six o'clock in the afternoon, when the machinery was stopped, and before seven o'clock, when the machinery would start up again for the help who were to work at night. He did not wait at this time for the wheel to stop fully, attempting to oil the machinery which was yet in motion, and was caught in the couplings, one leg being drawn in between them. His leg was badly bruised and torn, and other parts of his body were cut and bruised, but no bones were broken. He was taken to the city hospital for treatment.

MICHAEL DINAN, Dracut. Collins' Mills. Date of accident, July 17, 1889. This was a fatal accident, caused by being caught in the rolls of a gig machine. Mr. Dinan was engaged in tending this machine, and had just reversed the motion, to cause the cloth to unroll from the cylinder; he had hold of the leader attached to the cloth, and placed it on the bottom roll, so as to wind on said roll, when through some means his hand was caught between the cloth and rolls, winding his arm around one roll, and drawing him under the cylinder. His arm was broken in three places, and he received such other injuries that he died from their effect about two hours afterward. He was about seventy years of age, and the shock to his system, together with his injuries, caused a fatal result.

WILLIAM KENNEY, Cambridge. Harvard Printing Company. Date of accident, Aug. 23, 1889. An accident caused by falling through an elevator well. The person injured, a lad seventeen years old, was riding on the elevator car, and when at the third floor stepped onto said floor for some purpose, returning to the elevator a very short time afterward. While absent, however, the elevator car had been raised, and Kenney, ignorant of this fact, owing, in all probability, to insufficient light in the well, stepped into the opening and fell through, receiving, as a matter of course, severe injuries. There are, on each floor at the elevator opening, doors with springs to close, the doors being furnished with two ordinary knob catches. It is probable that some one, wishing to

use the elevator, withdrew it from that floor just at a time when Kenney, in his short absence, supposing it could not have been disturbed, had returned to the opening.

Stanislaus Gaboney, Chicopee. Chicopee Manufacturing Company. Date of accident, Aug. 30, 1889. This was the case of a boy sixteen years of age, who was killed in consequence of the bursting of an iron pulley. At the time of the accident young Gaboney was at work doffing on a spinning frame, which was located under the pulley, the latter being on a counter shaft, about thirteen feet above the floor. When the pulley burst, one piece flying out of the window, the belt run by the same became entangled on the portion of the pulley still on the shafting, and caused the shaft to be dragged from its bearings and fall to the floor. A portion of the shaft in falling struck Gaboney, crushing in the back of his skull. He lived only about twenty minutes after the accident occurred.

Nora Maroney, Springfield. Fisk Manufacturing Company. Date of accident, Sept. 3, 1889. This accident, a fatal one, is the first case reported to this office since the law requiring these reports went into effect, where a female operative was killed. If any other fatality occurred in the case of a female injured in any manufacturing establishment, it was not the immediate result of such accident, and certainly no information to that effect ever reached this office. However, it is sad, as in all the other fatalities, to record one now. As the operatives were returning to work after dinner on the day mentioned, one of the men discovered the body of Mrs. Maroney on the elevator car. From all the circumstances which attended the case, it is evident, beyond doubt, that she came into the building a little before starting up time, or shortly before one o'clock, and got onto the elevator and started the same, to go to the third floor, where she was employed. From the position in which she was found, it was seen that, in ascending, her head and shoulders were caught between the platform of the car and beam of the floor above. Whether she attempted to pick up her shawl, which some think was the case, or, from the fact that she did not understand how to manage the car, and leaned over too far, causing the accident, is hard to determine; but she was caught in such a manner and injured, that she could have lived but a very short time afterward, as the period between the time when she must have gone onto the elevator and the time when she was found could not have been more than a few minutes.

Victor Forbea, Sutton. B. B. & R. Knight (Manchaug Cotton Mills). Date of accident, Sept. 4, 1889. A fatal accident, caused by shafting, the deceased being a young person, only eighteen years old. It seems that a belt, leading from the main shaft to a counter shaft, connected with the machine he was operating, was loose, and he spoke to the foreman about it. He was told to let it be until the speed was shut down, and then it would be fixed. A short time afterward, when the foreman had left the room, Forbea attempted to fix the belt himself, and for this purpose got upon the creel, or spinning frame, to unship said belt. He lost his balance, and to save himself from falling threw his arm under the belt, and was caught by the same and drawn over the shaft. The speed was shut down as soon as possible, and he was taken down; but he sustained such terrible injury that he died about three hours after the accident happened.

John Belt, Fitchburg. Crocker, Burbank & Co., paper mills. Date of accident, Sept. 5, 1889. A fatal accident, which was caused by a paper-making machine. He was left in charge of the machine during the noon hour, and the exact manner of his death is not known. He was found dead in the machine, when the help returned at one o'clock, he being between the cylinders, under the endless belt of felt which carries the pulp to the cylinder; the upper cylinder being movable and resting on the lower cylinder by its own weight, which is about two hundred pounds. He evidently fell onto this felt, and was drawn under the cylinder. When examined, it was found that no bones were broken, and it is probable that he was strangled to death, being entangled in the felt.

Michael Dyer, Leominster. George W. Wheelwright Paper Company. Date of accident, Sept. 16, 1889. This was another accident by shafting, with a fatal result. Mr. Dyer was assisting the engineer to put a belt on the main shaft in the basement of the mill. He was holding the belt on the lower pulley, while the other man was putting it on the pulley above. When this man had got the belt on the upper pulley, he turned around only to find his helper caught in the lower pulley; and, before he could stop the machinery, Mr. Dyer's arm was torn off, and he was otherwise terribly injured. He lived but about three hours afterward. The location of the belt was a dangerous one, it being in a dark place, and never should have been put on when the machinery was in motion. The superintendent stated that a friction pulley would be put on, which would partially obviate the danger.

Lemon Ritson, Templeton. Bowen, Hadley & Co. Date of accident Sept. 25, 1889. Another case of fatal result, and caused by shafting. It appears that the belt running from the main shaft to the counter shaft of planing machine broke, and Mr. Ritson, who was running the machine, and another man, undertook to mend the belt. They had got the belt spliced, and before fastening it attempted to try its length by holding it on one pulley and up to the other. In doing this, the belt in an instant was quickly drawn on the other pulley, and Mr. Ritson was drawn or thrown over the shafting, and then onto the floor. When examined, he was found to be bleeding from the mouth, but no bones were broken. Medical assistance was summoned, and he was pronounced injured internally. He died from the effects of his injuries about four hours after the accident.

John A. Livingstone, Taunton. H. A. Williams Manufacturing Company. Date of accident, Oct. 3, 1889. This accident, like the previous one given, had a fatal result, and, like that one, was caused while attempting to adjust a belt. The person killed was a boy between fifteen and sixteen years of age. He was putting a small belt on a ten-inch pulley on the main shaft, and, it is supposed, used his hands alone, instead of taking the stick provided for such work, and which he had been directed, on various occasions, to always use. In some way, while standing on the bench and reaching overhead, his hand or sleeve of his frock was caught in the belt, and he was drawn up and whirled around the shaft His arm was torn off near the elbow, and he was so terribly injured that he lived only a few minutes after the accident occurred.

Everett Cheney, Malden. Adams Bros., cotton factory. Date of accident, Oct. 8, 1889. Mr. Cheney was another of those unfortunate men who lost life through shafting. He was the engineer of the establishment, and was alone in the picker room at the time of the accident. Another employee, entering the room, found the body of Mr. Cheney suspended by the clothing about the neck and shoulders, from the end of the counter shaft projecting beyond the hanger, upon which was a collar with a set screw, projecting nearly or quite an inch. The pressure of some part of his person had run the belt off from the pulley, thereby stopping the shafting and machinery. When the body was taken down, it was found that the neck, one arm and several ribs were broken. It is probable that he climbed upon the picker machine, directly under

the shaft, for the purpose of repairing the exhaust, attached to the machine, and his clothing, coming in contact with the set screw, caused the accident.

Thomas Martin, Lowell. Lawrence Manufacturing Company. Date of accident, Oct. 29, 1889. This was a fatal accident, caused by the bursting of a hydro extractor. This hydro extractor had been in use for seven years. It consisted of a brass basket, so called, about three and one-half feet in diameter, enclosed and revolving within an iron case, the said case being constructed of cast and boiler iron. At the time of the bursting of this brass basket, and consequently of the iron case, the extractor was running at its usual speed; namely, twelve or thirteen hundred revolutions per minute. Mr. Martin was struck in the head by a piece of the cast-iron rim of the outer case, fracturing his skull, and causing his death a short time afterward. At the same time, and through the same cause, two other men, also employees of the company, were injured by flying pieces of the iron: Michael Harvey, who received cuts on the head and hand, and was reported as being injured internally; and Henry Pelky, who was cut and bruised on the arm and legs.

Minor Young, Beverly. Woodbury Bros. Date of accident, Nov. 1, 1889. This case is another one where the shafting was the cause, but happily the person escaped serious injury. Minor Young, employed in the factory, and about seventeen years of age, was attempting to reach the handle of a broom which another young man on the floor above was putting down to him through a small hole in the floor. Young could not reach the handle from the place where he stood, and consequently raised himself on two or three horses, being nearly under the short end of a piece of hanging shafting, and reached up to grasp the handle. His clothing was caught on the set screw, and he was carried around the shaft and then thrown violently to the floor, his clothing being stripped from his body. He sustained a scalp wound and several cuts and bruises about the neck, arms and shoulders; but no bones were broken, and, as far as could be ascertained, no internal injury. It was a narrow escape from a very serious, if not fatal, result.

John F. Jones, Lowell. Tremont and Suffolk Mills. Date of accident, Nov. 4, 1889. This was a fatal accident, caused by falling through an elevator well. Mr. Jones was regularly employed in running the elevator. He had brought another employee, with a truck containing spools, up to the third floor, and had helped

the other man to roll the truck off the platform onto that floor, leaving the elevator empty. It is found, on testing the same, that, unless care is taken in the use of the shipper rod, when the elevator is stopped, to have the belt entirely run off the pulley, the elevator car, when relieved of the weight which it carries, will move slowly upward, the belt lapping over onto the movable pulley sufficiently to cause this action of the car. This was so in the case here mentioned. The distance between the edge of the elevator platform and the balanced gate protecting the opening is about three feet. Mr. Jones, after helping to remove the load, and standing with his back to the elevator, raised his hands to close the gate, and, at the same time, and without looking behind him, stepped backward to the elevator. The car having gone upward, by reason of the shipper rod not being properly used, left the elevator well open, and he fell through the same, about twenty-three feet, to the concrete bottom. He was instantly killed, his neck having been broken by the fall.

Patrick Waldron, Lowell. Merrimack Manufacturing Company. Date of accident, Nov. 23, 1889. This was a fatal accident, caused by being caught between the stand and carriage on mule frame. He got under the frame for the purpose of cleaning the machine, it being in motion at the time, and was backing out from under the same, when his head was caught between the carriage and stand, and it was crushed in such a manner that he died from the injuries received, about eight hours afterward. He was cleaning the machine, contrary to the rules, which forbid cleaning such when in motion, notice to that effect being posted in the room. The deceased was seventeen years of age, and was employed as a back boy in the mule room.

In a number of the cases above related, the accident was perhaps unavoidable. In others it was due, perhaps, in a great measure, to lack of care and caution on the part of those who were unfortunate in being the sufferers. In all the cases where it was possible so to do, means have been taken to prevent a recurrence of such accidents. With all the care and scrutiny which it is possible to exercise in the matter, "accidents will happen;" but it has invariably been the conduct of this department, in carrying out the purposes of these inspection laws, to seek every remedy and use every legal means to prevent mishap or accident in the use of machinery in manufacturing establishments; and I am grati-

fied in knowing that the inspectors in their several districts have been diligent in this respect, and used all the vigilance in their power to find defects, which might, if not remedied, result in serious accident. My experience enables me to speak with much favor regarding this law, as I know it has already shown good results, and has proved itself beneficial.

[Chapter 426.]

AN ACT IN RELATION TO WAYS OF EGRESS AND MEANS OF ESCAPE FROM FIRE IN CERTAIN BUILDINGS.

Be it enacted, etc., as follows:

SECTION 1. Every building now or hereafter used, in whole or in part, as a public building, public or private institution, school-house, church, theatre, public hall, place of assemblage or place of public resort, and every building in which ten or more persons are employed above the second story in a factory, workshop or mercantile or other establishment, and every hotel, family hotel, apartment-house, boarding-house, lodging-house or tenement-house in which ten or more persons lodge or reside above the second story, and every factory, workshop, mercantile or other establishment, the owner, lessee or occupant of which is notified in writing by the inspector hereinafter mentioned that the provisions of this act are deemed by him applicable thereto, shall be provided with proper ways of egress, or other means of escape from fire, sufficient for the use of all persons accommodated, assembling, employed, lodging or residing in such building; and such ways of egress and means of escape shall be kept free from obstruction, in good repair and ready for use. Every room above the second story in any such building in which ten or more persons are employed shall be provided, if the inspector mentioned in the following section shall so direct in writing, with more than one way of egress by stairways on the inside or outside of the building, placed as near as practicable at opposite ends of such room; stairways on the outside of the building shall have suitable railed landings at each story above the first, and shall connect with each story by doors or windows; and such landings, doors and windows shall be kept clear of ice and snow and other obstructions. Women or children shall not be employed in a factory, workshop or mercantile or other establishment, in a room above the second story from which there is only one way of egress, if the inspector mentioned in the following section shall so direct in writing. All doors and windows in any building subject to the provisions of this section shall open outwardly if the inspector mentioned in the

following section shall so direct in writing. No portable seats shall be allowed in the aisles or passageways of such building during any service or entertainment held therein. The proscenium or curtain opening of all theatres shall have a fire-resisting curtain of some incombustible material, and such curtain shall be properly constructed, and shall be operated by proper mechanism; the certificate of the inspector mentioned in the following section shall be conclusive evidence of a compliance with such requirements.

SECT. 2. It shall be the duty of such inspectors of factories and public buildings, as may be assigned to such duty by the chief of the district police force, to examine, as soon as may be after the passage of this act, and thereafter from time to time, all buildings within his district subject to the provisions of this act, and it shall be the duty of the inspector of buildings of the city of Boston so to examine all such buildings within said city. In case any such building conforms, in the judgment of such inspector, to the requirements of this act, he shall issue to the owner, lessee or occupant of such building, or of any portion thereof used as above mentioned in section one, a certificate to that effect, specifying the number of persons for whom the ways of egress or means of escape from fire are deemed to be sufficient. Such certificate shall be conclusive evidence, as long as it continues in force, of a compliance on the part of the person to whom it is issued with the provisions of this act. But such certificate shall be of no effect in case a greater number of persons than therein specified are accommodated or employed, or assemble, lodge or reside within such building or portion thereof, or in case such building is used for any purposes materially different from those for which it was used at the time of the granting thereof, or in case the internal arrangements of such building are materially altered, or in case any ways of egress or means of escape from fire existing in such building at the time of such granting are stopped up, rendered unavailable or materially changed; and in no case shall such certificate continue in force for more than five years from its date. Such certificate may be revoked by such inspector at any time upon written notice to the person holding the same, or occupying the premises for which it was granted, and shall be so revoked whenever, in his opinion, any conditions or circumstances have so changed that the existing ways of egress and means of escape are no longer proper and sufficient. A copy of the said certificate shall be kept posted in a conspicuous place upon every floor of such building by the person occupying the premises covered thereby.

SECT. 3. Upon an application being made to an inspector for the granting of a certificate under this act, he shall issue to the

person making the same an acknowledgment that such certificate has been applied for, and pending the granting or refusal of such certificate such acknowledgment shall have for a period of ninety days the same effect as such certificate, and such acknowledgment may be renewed by such inspector with the same effect for a further period not exceeding ninety days, and may be further renewed by the chief of the district police, until such time as such certificate shall be granted or refused.

SECT. 4. In case any change is made in any premises for which a certificate has been issued under this act, whether in the use thereof or otherwise, such as terminates the effect of such certificate, as above provided in section two, it shall be the duty of the person making the same to give written notice thereof forthwith to the inspector for the district, or to the chief of the district police, if such premises are outside of the city of Boston, or to the inspector of buildings of the city of Boston, if within said city.

SECT. 5. In case any building or portion thereof subject to the provisions of this act is found by an inspector to fail to conform thereto, or in case any change is made in such building or portion thereof such as terminates the effect of a certificate formerly granted therefor as aforesaid, it shall be the duty of such inspector to give notice in writing to the owner, lessee or occupant of such building, specifying and describing what additional ways of egress or means of escape from fire are necessary in the opinion of such inspector in order to conform to the provisions of this act and to secure the granting of a certificate as aforesaid. Notice to any agent of such owner, lessee or occupant in charge of the premises shall be sufficient notice under this section to such owner, lessee or occupant.

SECT. 6. In case any building subject to the provisions of this act is owned, leased or occupied, jointly or in severalty, by different persons, any one of such persons shall have the right to apply to any part of the outside of such building, and to sustain from any part of the outside wall thereof, any way of egress or means of escape from fire specified and described by an inspector as above provided, notwithstanding the objection of any other such owner, lessee or occupant; and any such way of egress or means of escape may project over the highway.

SECT. 7. When a license is required by law or municipal ordinance, in order to authorize any premises to be used for any purpose mentioned in section one, no license for such purpose shall be granted until a certificate for such building or portion thereof shall first have been obtained from an inspector as above

provided, and no such license hereafter issued shall continue in force any longer than such certificate remains in force.

SECT. 8. No wooden flue or air duct for heating or ventilating purposes shall hereafter be placed in any building subject to the provisions of section one of this act, and no pipe for conveying hot air or steam in such building shall be placed, or shall remain placed, nearer than one inch to any woodwork unless protected to the satisfaction of the said inspector by suitable guards or casings of incombustible material.

SECT. 9. Every story above the second of a building subject to the provisions of section one shall be supplied with means of extinguishing fire, consisting either of pails of water or other portable apparatus, or of a hose attached to a suitable water supply and capable of reaching any part of such story; and such means of extinguishing fire shall be kept at all times ready for use and in good condition.

SECT. 10. It shall be the duty of such members of the inspection department of the district police force as may be assigned to such duty by the chief of such force to enforce the provisions of this act outside of the city of Boston, and of the inspector of buildings of the city of Boston to enforce the same within said city, and for such purpose such inspectors shall have the right of access to all parts of any buildings subject to the provisions of this act.

SECT. 11. Cities may by ordinance provide that the provisions of this act shall apply to any buildings three or more stories in height within their respective limits.

SECT. 12. It shall be the duty of every owner, lessee or occupant of any building or part thereof subject to this act to cause the provisions thereof to be carried out, and any owner, lessee or occupant failing to observe such provisions shall be subject to a fine of not less than fifty nor more than one thousand dollars; but no prosecution therefor shall be brought until four weeks after written notice from an inspector, as above provided, of the changes necessary to be made in order to conform thereto, nor then if in the mean time such changes have been made in accordance with such notification. Notice to one member of a firm, or to the clerk or treasurer of a corporation, or to the person in charge of the premises, shall be deemed sufficient notice hereunder, and such notice may be given in person or by mail. Any such owner, lessee or occupant shall be liable for all damages caused by his violation of the provisions of this act. Any person using or occupying a building contrary to the provisions of this act may be enjoined from such use or occupation in a proceeding to be had before the

superior court or the supreme judicial court at the instance of the inspector, and upon the filing of a petition therefor any judge or justice of the court in which such proceeding is pending may issue a temporary injunction or restraining order, as provided in proceedings in equity.

SECT. 13. The governor of the Commonwealth is hereby authorized to appoint from time to time, as may be necessary, not exceeding ten additional members of the inspection department of the district police force, qualified to perform the duties of the members of such department.

SECT. 14. Sections fifteen to twenty inclusive of chapter one hundred and four of the Public Statutes, section two of chapter two hundred and fifty-one of the acts of the year eighteen hundred and eighty-three, chapter three hundred and twenty-six of the acts of the year eighteen hundred and eighty-five, chapter two hundred and seven of the acts of the year eighteen hundred and eighty-eight, and all acts and parts of acts inconsistent herewith, are hereby repealed.

SECT. 15. This act shall take effect on the first day of July in the year one thousand eight hundred and eighty-eight. [*Approved May 29, 1888.*

The magnitude of the work devolving upon the inspectors issuing certificates under the provisions of the foregoing act, may be judged by the fact that accurate plans of such buildings, drawn to scale, must be deposited in this department before approval of said certificates.

CERTIFICATES ISSUED.

Public Buildings, Factories, Workshops and Tenement Houses.	Story.	Location.	Date of Certificate.	Inspector.
Almont Street School,	1st,	Winthrop,	Nov. 28, 1888,	E. Y. Brown.
" " "	2d,	"	28, "	"
Banquet Hall, Odd Fellows Building,	3d,	Chelsea,	28, "	"
Odd Fellows Hall,	—	"	28, "	"
Pauline Street School,	1st,	Winthrop,	28, "	"
" " "	2d,	"	28, "	"
Pilgrim Hall, Odd Fellows Building,	2d,	Chelsea,	28, "	"
Forbes & Wallace,	3d,	Springfield,	Dec. 3, "	Lemuel Pope.
" "	4th,	"	3, "	"
Bixby Block,	2d,	Brockton,	4, "	J. H. Chadwick.
" "	3d,	"	4, "	"
" "	4th,	"	4, "	"
" "	5th,	"	4, "	"
Bank Block,	2d,	"	4, "	"
" "	3d,	"	4, "	"
" "	4th,	"	4, "	"
" "	5th,	"	4, "	"
Greylock Mill,	1st,	North Adams,	15, "	A. J. Cheney.
" "	2d,	" "	15, "	"
" "	3d,	" "	15, "	"
" "	4th,	" "	15, "	"
Union Street School,	1st,	" "	15, "	"
" " "	2d,	" "	15, "	"
" " "	3d,	" "	15, "	"

Veasey Street School,	1st,	" "	15, "	"
" " "	2d,	" "	15, "	"
Front Street Museum,	—	Worcester,	18, "	J. M. Dyson.
G. A. R Hall,	2d,	South Framingham,	19, "	J. A. Moore.
" "	3d,	" "	19, "	"
Bay State Plate Company,	4th,	Springfield,	20, "	Lemuel Pope.
Burgess, S P., Paper Box Manufactory,	4th,	"	20, "	"
Cutter & West,	3d,	"	20, "	"
" "	4th,	"	20, "	"
Chicopee Folding Company,	5th,	"	20, "	"
Chamberlin, J. H. D.,	3d,	"	20, "	"
Chamberlin, J. N.,	3d,	"	20, "	"
Central Street School,	1st,	Turner's Falls,	20, "	A. J. Cheney.
" " "	2d,	" "	20, "	"
Eighth Street School,	1st,	" "	20, "	"
" " "	2d,	" "	20, "	"
Greenfield High School,	1st,	Greenfield,	20, "	"
" " "	2d,	"	20, "	"
" " "	3d,	"	20, "	"
Lodging Rooms, 285 Main Street,	3d,	Springfield,	20, "	Lemuel Pope.
" " " "	4th,	"	20, "	"
" " " "	5th,	"	20, "	"
Medlicott & Morgan, 23 Taylor Street,	4th,	"	20, "	"
Medlicott & Morgan, 82 Worthington Street,	3d,	"	20, "	"
" " " "	4th,	"	20, "	"
Oakman School,	1st,	Turner's Falls,	20, "	A. J. Cheney.
" "	2d,	" "	20, "	"
" "	3d,	" "	20, "	"
P. Colby Paper Ruler Company,	3d,	Springfield,	20, "	Lemuel Pope.
" " "	4th,	"	20, "	"
R. H. Smith, Rubber Stamps,	3d,	"	20, "	"

Certificates Issued — Continued.

Public Buildings, Factories, Workshops and Tenement Houses.	Story.	Location.	Date of Certificate.	Inspector.
Republican Block,	3d,	Springfield,	Dec. 20, 1888,	Lemuel Pope.
Shea Brothers,	4th,	"	20, "	"
Spooner Pump Company,	3d,	"	20, "	"
Springfield Glue & Emery Company,	3d,	"	20, "	"
Springfield Union Company,	5th,	"	20, "	"
Taylor's Box Shop,	4th,	"	20, "	"
United Zylonite Company, Finishing Building, Basement,	–	Adams,	20, "	A. J. Cheney.
United Zylonite Company, Finishing Building,	1st,	"	20, "	"
United Zylonite Company, Finishing Building,	2d,	"	20, "	"
United Zylonite Company, Shipping & Packing Building,	1st,	"	20, "	"
United Zylonite Company, Shipping & Packing Building,	2d,	"	20, "	"
Zylonite School,	1st,	"	21, "	"
" "	2d,	"	21, "	"
Union Newspaper,	5th,	Springfield,	26, "	Lemuel Pope.
Adams Academy,	1st,	Adams,	31, "	A. J. Cheney.
" "	2d,	"	31, "	"
" "	3d,	"	31, "	"
Bigbee, W. W., cor. Main & Worthington Streets,	4th,	Springfield,	31, "	Lemuel Pope.
Broadbrook School,	-	Williamstown,	31, "	A. J. Cheney.
Blackington School,	1st,	North Adams,	31, "	"
" "	2d,	" "	31, "	"
Cavanaugh Block,	1st,	" "	31, "	"
" "	2d,	" "	31, "	"

" "	3d,	" "	31, "	"
Collins Block,	2d,	" "	31, "	"
" "	3d,	" "	31, "	"
Drury Academy,	1st,	" "	31, "	"
" "	2d,	" "	31, "	"
" "	3d,	" "	31, "	"
" "	4th,	" "	31, "	"
Fraternity Hall,	–	Salem,	31, "	S. C. Hunt.
Howard Hall,	–	"	31, "	"
Iverson School,	2d,	"	31, "	"
" "	3d,	"	31, "	"
Morse's Opera House (gallery),	–	Franklin,	31, "	J. A. Moore.
" " " (auditorium),	–	"	31,	"
" " "	–	"	31, "	"
Metcalf Block,	2d,	"	31, "	"
Masonic Hall,	3d,	Salem,	31, "	S. C. Hunt.
Mechanics Hall (balcony),	–	"	31, "	"
" " (auditorium),	–	"	31, "	"
Mechanics Light Infantry Armory,	–	"	31, "	"
" " (auditorium),	–	"	31, "	"
Odd Fellows Hall,	3d,	Franklin,	31, "	A. J. Cheney.
Shaw School,	1st,	Wellesley Hills,	31, "	J. A. Moore.
" "	2d,	" "	31, "	"
" "	3d,	" "	31, "	"
Saltonstall School,	2d,	Salem,	31, "	S. C. Hunt.
" "	3d,	"	31, "	"
Terry Clock Company,	2d,	Pittsfield,	31, "	A. J. Cheney.
" " "	3d,	"	31, "	"
Tucker & Cook's Manufacturing Company,	1st,	Conway,	31, "	"
" " " "	2d,	"	31, "	"
" " " "	3d,	"	31, "	"
Williamstown Station School,	–	Williamstown,	31, "	"

Certificates Issued—Continued.

Public Buildings, Factories, Workshops and Tenement Houses.	Story.	Location.	Date of Certificate.	Inspector.
Wilson House,	2d,	North Adams,	Dec. 31, 1888,	A. J. Cheney.
" "	3d,	" "	31, "	"
" "	4th,	" "	31, "	"
Wilson & Horton's Mill,	1st,	Pittsfield,	31, "	"
" " "	2d,	"	31, "	"
" " "	3d,	"	31, "	"
" " "	4th,	"	31, "	"
" " " (attic),	–	"	31, "	"
Everett House,	2d,	South Framingham,	Jan. 11, 1889,	J. A. Moore.
" "	3d,	" "	11, "	"
Union Block,	3d,	" "	11, "	"
G. A. R. Building (main hall),	2d,	Chelsea,	16, "	E. Y. Brown.
" " (banquet hall),	3d,	"	16, "	"
Town Hall (gallery),	2d,	Watertown,	16, "	J. H. L. Coon.
" "	2d,	"	16, "	"
Asiatic Hall,	–	Salem,	21, "	S. C. Hunt.
Essex Lodge, I. O. O. F.,	–	"	21, "	"
Granite Hall,	3d,	Chelsea,	21, "	E. Y. Brown.
" "	4th,	"	21, "	"
" " (gallery),	–	"	21, "	"
Post 34 G. A. R. Hall,	–	Salem,	21, "	S. C. Hunt.
United Order Mechanics Hall,	–	"	21, "	"
Shurtleff School,	1st,	Chelsea,	26, "	E. Y. Brown.
" "	2d,	"	26, "	"
" "	3d,	"	26, "	"
Garland's Block (hall),	3d,	Gardner,	28, "	J. M. Dyson.

Wood's Hall,	3d,	–	Leominster,		28,	" "
Hibernian Hall,	–	–	Salem,		31,	" S. C. Hunt.
Lyceum Hall,	–	–	"		31,	" "
Putney Block,	3d,	–	Wellesley Hills,		31,	" J. A. Moore.
Phœnix Hall,	–	–	Salem,		31,	" S. C. Hunt.
Ætna Mills,	3d,	–	Watertown,	Feb.	1,	" J. H. L. Coon.
" "	4th,	–	"		1,	" "
Conservatory Hall,	–	–	Cambridge,		2,	" J. T. White.
Elmwood Opera House (auditorium),	–	–	South Framingham,	Mar.	12,	" J. A. Moore.
" " " (gallery),	–	–	" "		12,	" "
Leominster Hall,	–	–	Leominster,		12,	" J. M. Dyson.
St. Jean Baptiste Society Hall,	–	–	Marlborough,		12,	" J. A. Moore.
Town Hall,	2d,	–	"		16,	" "
" "	3d,	–	"		16,	" "
" " (annex),	–	–	Winchester,		19,	" J. T. White.
" " (auditorium),	–	–	"		19,	" "
" " (gallery),	–	–	"		19,	" "
Music Hall (parquet),	–	–	Lowell,		25,	" "
" " (gallery),	–	–	"		25,	" "
Masonic Hall,	–	–	Cambridgeport,		28,	" "
" " (banquet hall),	–	–	"		28,	" "
Nobscott Block,	3d,	–	South Framingham,	April	2,	" J. A. Moore.
Town Hall,	–	–	Brookline,		2,	" J. H. L. Coon.
" " (lower hall),	–	–	"		2,	" "
" " (gallery),	–	–	"		2,	" "
Masonic Building (banquet hall),	–	–	Chelsea,		10,	" E. Y Brown.
" " (Masonic hall),	–	–	"		10,	" "
Winthrop House,	2d,	–	South Framingham,		12,	" J. A. Moore.
" "	3d,	–	" "		12,	" "
" "	4th,	–	" "		12,	" "
City Hall,	–	–	West Newton,		13,	". J. H. L. Coon.

Certificates Issued — Continued.

Public Buildings, Factories, Workshops and Tenement Houses.	Story.	Location.	Date of Certificate.	Inspector.
Cambridge Hall, Hyde's Block,	4th,	Cambridgeport,	April 18, 1889,	J. T. White.
St. George's Hall,	–	Marlborough,	18, "	J. A. Moore.
Lawrence Opera House,	2d,	Lawrence,	25, "	S. C. Hunt.
" "	3d,	"	25, "	"
Odd Fellows Hall,	–	Hopkinton,	May 22, "	J. A. Moore.
Guild's Block (hall),	3d,	Gardner,	June 18, "	J. M. Dyson.
Parochial School,	1st,	Watertown,	18, "	J. H. L. Coon.
" "	2d,	"	18, "	"
Atkinson, B. F., Block,	2d,	Newburyport,	29, "	A. J. Cheney.
" "	3d,	"	29, "	"
Brown Square Hotel,	1st,	"	29, "	"
" "	2d,	"	29, "	"
" "	3d,	"	29, "	"
" "	4th,	"	29, "	"
Fairfield's Block, 413 to 419 Essex Street,	2d,	"	29, "	"
" " " "	3d,	"	29, "	"
" " " "	4th,	"	29, "	"
" " 421 to 427 "	2d,	"	29, "	"
" " " "	3d,	"	29, "	"
" " " "	4th,	"	29, "	"
" " 429 to 435 "	2d,	"	29, "	"
" " " "	3d,	"	29, "	"
" " " "	4th,	"	29, "	"
" " " "	5th,	"	29, "	"
Ocean View House,	1st,	Rockport,	29, "	"
" "	2d,	"	29, "	"

" "	3d,	"		29,	"	"
" "	4th,	"		29,	"	"
" "	5th,	"		29,	"	"
Simmons Block,	2d,	Lawrence,		29,	"	"
" "	3d,	"		29,	"	"
" "	4th,	"		29,	"	"
Town Hall,	–	Medford,		29,	"	J. T. White.
Court Room, Stebbins Block,	3d,	Chelsea,	July	6,	"	E. Y. Brown.
Father Mathew Hall,	–	Worcester,		10,	"	J. M. Dyson.
Odd Fellows Hall,	–	Hudson,		10,	"	J. T. White.
" " "	–	South Framingham,		10,	"	J. A. Moore.
Pythian Hall, Stebbins Block,	3d,	Chelsea,		10,	"	E. Y. Brown.
Union Veteran Hall,	3d,	"		10,	"	"
Commonwealth Shoe and Leather Company,	1st,	Marlborough,		12,	"	J. A. Moore.
" " " "	2d,	"		12,	"	"
" " " "	3d,	"		12,	"	"
" " " "	4th,	"		12,	"	"
Gillon's Block,	2d,	Milford,		20,	"	"
" "	3d,	"		20,	"	"
" "	4th,	"		20,	"	"
Jones Block,	1st,	North Adams,	Sept.	2,	"	F. W. Merriam.
" "	2d,	" "		2,	"	"
Berkshire Life Insurance Company,	3d,	Pittsfield,		2,	"	"
Central Hall,	3d,	Housatonic Village,		2,	"	"
G. A. R. Hall,	2d,	" "		2,	"	"
Holliston Building,	3d,	Greenfield,		2,	"	"
High School,	1st,	Great Barrington,		2,	"	"
" "	2d,	" "		2,	"	"
Masonic Hall,	3d,	" "		2,	"	"
Masonic Lodge Rooms,	4th,	Greenfield,		2,	"	"
" " "	4th,	Pittsfield,		2,	"	"

Certificates Issued—Continued.

Public Buildings, Factories, Workshops and Tenement Houses.	Story.	Location	Date of Certificate.	Inspector.
Odd Fellows Hall,	–	Orange,	Sept 2, 1889,	F. W. Merriam.
Reardon Block,	3d,	North Adams,	2, "	"
Town Hall,	–	Erving,	2, "	"
Sanborn Block,	3d,	Greenfield,	2, "	"
Tower & Porter's Block,	3d,	North Adams,	2, "	"
" " "	4th,	" "	2, "	"
Taylor's Block,	3d,	" "	2, "	"
Wollison Block,	3d,	Pittsfield,	2, "	"
" "	4th,	"	2, "	"
Alhambra Block,	2d,	"	3, "	"
" "	3d,	"	3, "	"
Hotel Willian,	2d,	"	3, "	"
" "	3d,	"	3, "	"
" "	4th,	"	3, "	"
Bridge's Block,	2d,	Hopkinton,	6, "	"
" "	3d,	"	6, "	"
Sturtevant Hall,	2d,	Newton Centre,	6, "	J. H. L. Coon.
" "	3d,	" "	6, "	"
" "	4th,	" "	6, "	"
A. O. H. Society Hall,	3d,	Turner's Falls,	10, "	"
Chapel Hall,	–	Deerfield,	10, "	"
Dalton Shoe Company Factory,	3d,	Craneville,	10, "	"
Eclipse Mill,	–	North Adams,	10, "	"
Glendale School,	1st,	Glendale,	10, "	"
" "	2d,	"	10, "	"
Broadway School,	1st,	Everett,	10, "	J. T. White.

" "	2d, .	"	10, "	"
Crystal Fount Lodge, I. O. O. F. (banquet room),	–	Woburn, ...	11, "	"
" " " " (hall), . .	–	"	11, "	"
Farwell Hall (lodging house), ...	1st, .	Newton Centre, . . .	11, "	J. H. L. Coon.
" " " "	2d, .	" " . . .	11, "	"
" " " "	3d, .	" " . . .	11, "	"
" " " "	4th, .	" " . . .	11, "	"
Music Hall, ...	–	Woburn, ...	11, "	J. T. White.
Park House, ...	2d, .	Hopkinton, ...	11, "	J. A. Moore.
" "	3d, .	"	11, "	"
Carter School, ...	1st, .	Chelsea, ...	28, "	E. Y. Brown.
" "	2d .	"	28, "	"
" "	3d, .	"	28, "	"
" "	4th, .	"	28, "	"
High School, ...	3d, .	Newtonville, . . .	28, "	J. H. L. Coon.
Proctor House, ...	2d, .	South Framingham, . .	28, "	J. A. Moore.
" "	3d, .	" " . .	28, "	"
Williams School, ...	1st, .	Chelsea, ...	28, "	E. Y. Brown.
" "	2d, .	"	28, "	"
" "	3d, .	"	28, "	"
" "	4th, .	"	28, "	"
Coolidge Block, ...	2d, .	Newton Centre, . . .	Oct. 4, "	J. H. L. Coon.
" "	3d, .	" " . . .	4, "	"
Fremont Block Hall, ...	3d, .	Chelsea, ...	10, "	E. Y. Brown.
George F. Littlefield Company's Shoe Factory, .	3d, .	Turner's Falls, . . .	10, "	F. W. Merriam.
Jay B. Reynolds' Shoe Factory, ...	3d, .	Orange, ...	10, "	"
Morgan Hall, ...	3d, .	Williamstown, . . .	10, "	"
" "	4th, .	"	10, "	"
Pautucket Hall, ...	2d, .	Turner's Falls, . . .	10, "	"
Town Hall, ...	–	Hinsdale, ...	10, "	"
Town Cliff School, ...	–	Town Cliff, ...	10, "	"

Certificates Issued — Continued.

Public Buildings, Factories, Workshops and Tenement Houses.	Story.	Location.	Date of Certificate.	Inspector.
Van Sickler Mill,	3d,	Pittsfield,	Oct. 10, 1889,	F. W. Merriam.
" "	4th,	"	10, "	"
Williamstown Manufacturing Company Mill,	3d,	Williamstown,	10, "	"
" " " "	4th,	"	10, "	"
Johnson Manufacturing Company Mill,	3d,	North Adams,	10, "	"
" " " "	4th,	" "	10, "	"
Pittsfield Steam Power Company,	3d,	Pittsfield,	10, "	"
Fremont Block Hall,	4th,	Chelsea,	10, "	E. Y. Brown.
Knights of Honor Hall,	3d,	Winthrop,	10, "	"
Masonic Hall, Reed's Block,	3d,	"	10, "	"
National Bank Building (hall),	3d,	Chelsea,	10, "	"
Banquet Hall, Central Block,	4th,	Newtonville,	17, "	J. H. L. Coon.
Masonic Hall, Central Block,	3d,	"	17, "	"
Review Club House Hall,	3d,	Chelsea,	17, "	E. Y. Brown.
Town Hall,	–	Framingham,	18, "	J. A. Moore.
Goucher's Hotel,	3d,	Milford,	31, "	"
Irving Block,	3d,	"	31, "	"
T. A. Whicher & Co.'s Shoe Shop,	3d,	Quincy,	Nov. 1, "	Lemuel Pope.
" " " "	4th,	"	1, "	"
D. W. Ellis Sons' Woollen Mills,	2d,	Monson,	1, "	W. S. Buxton.
" " " "	3d,	"	1, "	"
Belding Brothers' Main Silk Mill,	1st,	Northampton,	1. "	"
" " " " "	2d,	"	1, "	"
" " " " "	3d,	"	1, "	"
" " " " "	4th,	"	1, "	"
" " Old Silk Mill,	1st,	"	1, "	"

" " " " "	2d,	"	1,	"	"
" " " " "	3d,	"	1,	"	"
" " " " "	4th,	"	1,	"	"
Shaw Woollen Mill,	1st,	Wales,	1,	"	"
" " "	2d,	"	1,	"	"
" " "	3d,	"	1,	"	"
Dell Woollen Mill,	1st,	"	1,	"	"
" " "	2d,	"	1,	"	"
" " "	3d,	"	1,	"	"
" " "	4th,	"	1.	"	"
Hegan Woollen Mill,	1st,	"	1,	"	"
" " "	2d,	"	1,	"	"
" " "	3d,	"	1,	"	"
" " "	4th,	"	1,	"	"
S. F. Cushman's Home Mill,	1st,	"	1,	"	"
" " "	2d,	"	1,	"	"
" " "	3d,	"	1,	"	"
" " "	4th,	"	1,	"	"
" Branch Mill,	1st,	Monson,	1,	"	"
" " "	2d,	"	1,	"	"
" " "	3d,	"	1,	"	"
" " "	4th,	"	1,	"	"
" " "	5th,	"	1,	"	"
New School House,	1st,	Hopkinton,	4,	"	J. A. Moore.
" "	2d,	"	4,	"	"
R. M. & T. Reynolds' New Mill,	1st,	Monson,	8,	"	W. S. Buxton.
" "	2d,	"	8,	"	"
" "	3d,	"	8,	"	"
" "	4th,	"	8,	"	"
" "	5th,	"	8,	"	"
" Old Mill,	1st,	"	8,	"	"

Certificates Issued — Concluded.

Public Buildings, Factories, Workshops and Tenement Houses.	Story.	Location.	Date of Certificate.	Inspector.
R. M. & T. Reynolds' Old Mill,	2d,	Monson,	Nov. 8, 1889,	W. S. Buxton.
" "	3d,	"	8, "	"
" "	4th,	"	8, "	"
H. O. Fearing & Co.'s Factory,	1st,	Amherst,	8, "	"
" "	2d,	"	8, "	"
" "	3d,	"	8, "	"
" "	4th,	"	8, "	"
High School,	1st,	Marlborough,	17, "	J. A. Moore.
" "	2d,	"	17, "	"
" "	3d,	"	17, "	"
Kimball School,	1st,	Needham,	21, "	"
" "	2d,	"	21, "	"
" "	3d,	"	21, "	"
High School,	1st,	Hopedale,	21, "	"
" "	2d,	"	21, "	"
Kingsbury Block,	3d,	Needham,	21, "	"
Lokerville School,	–	Framingham,	21, "	"
Centre School,	1st,	Natick,	23, "	"
" "	2d,	"	23, "	"
" "	3d,	"	23, "	"

[Chapter 316.]

AN ACT TO REGULATE THE ERECTION AND CONSTRUCTION OF CERTAIN BUILDINGS.

Be it enacted, etc., as follows:

SECTION 1. No building designed to be used, in whole or in part, as a public building, public or private institution, school-house, church, theatre, public hall, place of assemblage or place of public resort, and no building more than two stories in height designed to be used above the second story, in whole or in part, as a factory, workshop or mercantile or other establishment and having accommodations for ten or more employees above said story, and no building more than two stories in height designed to be used above the second story, in whole or in part, as a hotel, family hotel, apartment house, boarding house, lodging house or tenement house and having ten or more rooms above said story, shall hereafter be erected, unless in process of erection at the date of the passage of this act, until a copy of the plans of such building has been deposited with the inspector of factories and public buildings for the district in which such building is to be located, if outside of the city of Boston, or with the inspector of buildings of the city of Boston, if within said city, together with a copy of such portion of the specifications of such building as such inspector may require, nor shall any such building be so erected without the provision of sufficient ways of egress and other means of escape from fire, properly located and constructed; the certificate of the inspector above named endorsed, if the building is to be located outside the city of Boston, with the approval of the chief of the district police force, shall be conclusive evidence of a compliance with the provisions of this act; provided, that after the granting of such certificate no change is made in the plans or specifications of such ways of egress and means of escape unless a new certificate is obtained therefor. Such inspector may require that proper fire stops shall be provided in the floors, walls and partitions of such buildings and may make such further requirements as may be necessary or proper to prevent the spread of fire therein or its communication from any steam boiler or heating apparatus; and no pipe for conveying hot air or steam in such building shall be placed nearer than one inch to any wood-work unless protected to the satisfaction of such inspector by suitable guards or casings of incombustible material, and no wooden flue or air-duct for heating or ventilating purposes shall be placed in any such building.

SECT. 2. Any person erecting or constructing a building in violation of the provisions of this act shall be punished by fine of

not less than fifty nor more than one thousand dollars, and such erection or construction may be enjoined in a proceeding to be had before the superior or supreme judicial court at the instance of the inspector above named, and upon the filing of a petition for such injunction any justice of the court in which such proceeding is pending may issue a temporary injunction or restraining order, as provided in proceedings in equity.

SECT. 3. This act shall take effect on the first day of October in the year one thousand eight hundred and eighty-eight. [*Approved May 9, 1888.*

In compliance with the above enactment, plans of the following-named buildings have been deposited with the inspector of factories and public buildings for the district in which such building is to be located.

DISTRICT NO. 1.—JOHN T. WHITE, *Inspector.*

BUILDING.	Location.	Changes Recommended.
High School, . . .	Concord, . .	Fire stops to be put in.
First Universalist Church, .	Cambridge, . .	None.
First Universalist Church, .	Dunstable, . .	None.
School, ...	Medford, . .	Fire stops.
Y. M. C. A. Hall, . .	Everett, . .	Fire stops; additional egress.
New mill for Lamson Store Service Co.	Lowell, . . .	None.
Broadway School, . .	Everett, . .	Fire stops.
Home School, . . .	Everett, . .	Fire stops and better ways of escape from fire.
Cambridge Mutual Fire Insurance Co.	Cambridge, . .	Slight change in ways of escape from fire.
Hasty's Apartment House, .	Cambridge, . .	None.
Locust Street School, . .	Everett, . .	Better ventilation.
James' Tenement House, .	Cambridge, . .	One fire escape.
West Medford School, .	Medford.	
New Training School, . .	Lowell, . .	None.
Mazeppa Engine House, .	Lowell, . .	None.
B. F. Clark's Tenement, .	Lowell, . .	None.
Woodbridge Hotel, . .	Somerville, . .	Stairway extended to attic.
Peabody School, . . .	Cambridge, . .	Fire stops and better ways of escape from fire.

DISTRICT No. 1 — Concluded.

Buildings.	Location.	Changes Recommended.
Woodbury's Planing Mill,	Cambridge,	None.
City Hall,	Cambridge,	None.
A. H. Granstien,	Cambridge,	None.
Cambridgeport Dairy Co.,	Cambridge,	None.
Belmont School,	Malden,	None.
Armstrong's Tenement House.	Cambridge,	None.
Boott Cotton Mills,	Lowell,	None.
I. S. Granstien,	Cambridge,	None.
West Somerville Baptist Church.	Somerville,	Change in gallery stairs.
Holmes Building,	Cambridge,	None.
Rogers Building,	Cambridge,	None.
S. E. Marcy Family Hotel,	Cambridge.	
W. T. Willey Tenement House.	Cambridge,	Change in partitions around stairways.
Tenement House,	Somerville,	None.
Putnam School,	Cambridge,	Change in doorways on third floor.
Concord Square School,	Somerville,	Change in stairway.
Harvard Athletic Building,	Cambridge,	None.
Social Union Hall,	Cambridge,	None.

DISTRICT No. 2. — JOSEPH A. MOORE, *Inspector*.

New School Building,	Ashland,	Doors to swing out; ventilating shaft altered.
State Normal School Building.	Framingham,	None.
Addition to Crocker Hall, Normal School.	Framingham,	Plan not approved; egress from third story not sufficient.
Lokerville School Building,	Framingham,	None.
Smith's Block,	Framingham,	Additional egress.
High School Building,	Hopedale,	Additional egress from second story.
Harrison Block,	Hopedale,	Fire escape; door cut; doors open out; fire stops under stairs.
Commonwealth Shoe and Leather Co.'s Factory.	Marlborough,	Fire escapes.

DISTRICT No. 2 — *Concluded.*

BUILDING.	Location.	Changes Recommended.
Rice & Hutchins' Factory, .	Marlborough, .	Fire escapes.
St. Jean Baptiste Society's Building.	Marlborough, .	Better egress.
High School Building, . .	Marlborough, .	Additional stairway; doors swing out; fire and smoke stops.
Gillon's Block, . . .	Milford, . .	Fire escape; stand pipe and hose on upper story.
J. B. Walcott's Building, .	Natick, . .	Fire escape; additional stairway from banquet hall.
St. Mark's School Building,	Southborough, .	Fire escape.
Shattuck's Block, . . .	Wellesley, . .	Additional stairway; fire stops; doors open out.
Caroline A. Wood Cottage, .	Wellesley, . .	Additional stairway; doors cut.

DISTRICT No. 3. — J. H. L. COON, *Inspector.*

Stevens Hall, . . .	Newton Highlands,	Main stairway extended to seven feet wide; main entrance made fire-proof; main entrance doors to open out; doors through ante-room to swing both ways; asbestos cloth in floor of hall; fire-proof wall between old and new buildings.
Eliot Church, . . .	Newton.	
Catholic Church, . . .	West Newton.	
Coolidge Building, . .	Newton Centre, .	Front and rear stairway to second floor made fire-proof and disconnected from store on ground floor; ceiling of store to be wire lathed and plastered.
Unitarian Building, . .	Watertown, . .	Main entrance doors to swing out or both ways.
Otis Building, . . .	Watertown, . .	Additional stairway from third floor to be disconnected from store on ground floor.
Almshouse Building, . .	Watertown.	
Mrs. A. A. Lawrence's Tenement House.	Brookline, . .	Balcony around centre brick wall as a fire escape from each division of building.

DISTRICT No. 4. — EDWIN Y. BROWN, *Inspector.*

Hoyt's Tenement House, .	Chelsea.	
Gould's Tenement House, .	Chelsea.	
Review Club House, . .	Chelsea.	

DISTRICT No. 4 — *Concluded.*

BUILDING.	Location.	Changes Recommended.
First National Bank Building,	Chelsea.	
Crescent Beach Schoolhouse.	Revere.	
Addition to Young's Hotel, .	Winthrop.	

DISTRICT No. 5. — JOSEPH M. DYSON, *Inspector.*

Armory for Massachusetts Volunteer Militia.	Worcester, . .	Construction of stairways.
Knowles Loom Works, .	Worcester, . .	Approved.
Salisbury Street School, ten rooms.	Worcester, . .	Brick partition walls.
Old Worcester Academy, .	Worcester, . .	Fire escape on each end.
Worcester Theatre, . .	Worcester, . .	Means of egress.
Dignon Building, . . .	Worcester, . .	Approved.
Quinsigamond School, four rooms.	Worcester, . .	Brick partitions and location of lavatory.
Worcester Almshouse (addition).	Worcester, . .	Approved.
H. C. Fish Building, . .	Worcester, . .	Approved.
Mullen's Building, . .	Worcester, . .	Additional means of egress.
C. B. Cook's Building, . .	Worcester, . .	Additional means of egress.
H. F. Prentice Building, Main Street.	Worcester, . .	Additional means of egress.
Buck's Building, . . .	Worcester, . .	Approved.
Clark's Building, . . .	Worcester, . .	Approved.
William H. Burns Building,	Worcester, . .	Construction of stairways to be all iron.
Logan, Swift & Brigham, Envelope Factory.	Worcester, . .	Approved.
W. A. Denholm Apartment House.	Worcester, . .	Approved.
Lower Village Primary School.	Athol, . . .	System of ventilation.
Parkhill Manufacturing Company.	Fitchburg, . .	Approved.
Grafton School (addition), .	Grafton, . .	Ventilation.
Paul Whitin Manufacturing Company Mill (addition).	Northbridge, . .	Additional means of egress.

DISTRICT No. 5 — *Concluded.*

BUILDING.	Location.	Changes Recommended.
Sugden Building, . . .	Spencer, . .	Approved.
Southbridge Town Hall and High School.	Southbridge, .	Approved.
Parochial School, . . .	Southbridge, . .	Approved.
Baldwinsville Cottages, .	Templeton, . .	Additional egress from two hospital buildings.
High School, ...	Whitinsville, .	Approved.
West Boylston Manufacturing Company (extension).	West Boylston, .	Additional means of egress.
Oakdale School, . . .	West Boylston, .	Additional means of egress.
Forrest House, . . .	Worcester, . .	Additional means of egress; fire stops, and all rooms connected by doors with glass panels.

DISTRICT No. 6. — H. A. DEXTER, *Inspector.*

Hargraves Manufacturing Company.	Fall River.	
Border City Manufacturing Company.	Fall River.	
Sagamore Manufacturing Company.	Fall River.	
Stafford Mill, . . .	Fall River.	
Richard Borden Mill, . .	Fall River.	
Fall River Iron Works Mill,	Fall River.	
Mellen House, . . .	Fall River.	
Clark's Tenement House, .	Fall River, . .	Stairways changed.
St. Mary's Church, . .	Fall River, . .	Stairways changed.
Foster Hooper School, . .	Fall River, . .	Additional stairway.
Bennet Mill, ...	New Bedford.	
Howland Mill, . . .	New Bedford.	
Hathaway Manufacturing Company.	New Bedford.	
New Bedford Casket Company.	New Bedford.	
Lowell's Carriage Manufactory.	New Bedford, .	Tower stairway.
Winslow Building, . .	New Bedford.	
Harrington School, . .	New Bedford.	
Church, ...	Woods Holl (Falmouth).	

DISTRICT No. 7.—WARREN S. BUXTON, *Inspector.*

BUILDING.	LOCATION.	CHANGES RECOMMENDED.
M. A. Hardeman's Block,	Holyoke,	Fire and smoke stops.
A. Kelly's Block,	Holyoke,	Fire and smoke stops.
D. Gagne's Block,	Holyoke,	Fire and smoke stops.
P. Guffrion's Block,	Holyoke,	Fire and smoke stops.
Ferguson & Logan's Block,	Holyoke,	Fire and smoke stops.
W. H. Barlow's Block,	Holyoke,	Fire and smoke stops.
J. Gagnon's Block,	Holyoke,	Fire and smoke stops.
J. St. John's Block,	Holyoke,	Fire and smoke stops.
G. Potvin's Block,	Holyoke,	Fire and smoke stops.
M. D. Fenton's Block,	Holyoke,	Fire and smoke stops.
A. Mondon's Block,	Holyoke,	Fire and smoke stops.
M. McCormick's Block,	Holyoke,	Fire and smoke stops.
J. P. Griffin's Block,	Holyoke,	Fire and smoke stops.
J. J. Casey's Block,	Holyoke,	Fire and smoke stops.
J. Gaznon's Block,	Holyoke,	Fire and smoke stops.
E Morearty's Block,	Holyoke,	Fire and smoke stops.
E. Collins' Block,	Holyoke,	Fire and smoke stops.
T. Shey's Block,	Holyoke,	Fire and smoke stops.
A. Perrauld's Block,	Holyoke,	Fire and smoke stops.
T. Lamerander's Block,	Holyoke,	Fire and smoke stops.
T. Dillon's Block,	Holyoke,	Fire and smoke stops.
M. E. Commings' Block,	Holyoke,	Fire and smoke stops.
W. Ely & Son's Block,	Holyoke,	Fire and smoke stops.
T. J. Flanagin's Block,	Holyoke,	Fire and smoke stops.
P. O D. Fitzgibbon's Block,	Holyoke,	Fire and smoke stops.
A. Perrault's Block,	Holyoke,	Fire and smoke stops.
Holyoke House Addition,	Holyoke,	Fire and smoke stops.
T. Lamerander's Block,	Holyoke,	Fire and smoke stops.
J. C. Keough's Block,	Holyoke,	Fire and smoke stops.
D. H. & J. B. Tower's Block,	Holyoke,	Fire and smoke stops.
Tonsant Gazette's Block,	Holyoke,	Fire and smoke stops.
Frank Beebe's Block,	Holyoke,	Fire and smoke stops.
Universalist Church,	Westfield,	Outside doors open out; fire and smoke stops.

DISTRICT No. 7 — *Concluded.*

BUILDING.	Location.	Changes Recommended.
West Farm School-house, .	Westfield, . .	Ventilation; fire and smoke stops.
Westfield High School Building.	Westfield, . .	Ventilation; fire and smoke stops.
Green Street School Building.	Monson, . .	Ventilation and fire stops.
Universalist Church, . .	Monson, . .	No changes.
Ludlow New Mill, . .	Ludlow, . .	No changes.
Palmer High School, . .	Palmer, . .	No changes.
Smith College Dormitory, .	Northampton, .	Partitions around the stairs to be filled with brick.
A. Kingsbury & Son's, . .	Northampton, .	Additional tower stairway.
South Street School Building,	Northampton, .	Ventilation; smoke and fire stops.
J. E. Lambie's Block, . .	Northampton, .	Brick partition around stairway.
J. Olmstead's Block, . .	Springfield, . .	Fire and smoke stops.
James Abbe's Block, . .	Springfield, . .	Fire and smoke stops and fire escape.
J. L. Worthy's Block, . .	Springfield, . .	No changes ordered.
J. Olmstead's Block, . .	Springfield, . .	Fire and smoke stops.
Cheney Bigelow's Wire Works.	Springfield, . .	Fire and smoke stops and additional stairway.
S. Porter's Block, . .	Springfield, . .	Additional stairway.
G. A. Bush's Block, . .	Springfield, . .	Fire and smoke stops and fire escape.
J. C. Parsons Estate's Block,	Springfield, . .	Fire and smoke stops.
Springfield Steam Power Company's Block.	Springfield, . .	Fire and smoke stops; doors open out; brick walls around stairways.
Addition to Cooley's Hotel,	Springfield, . .	Fire and smoke stops; fire escape.
Sacred Heart Church, . .	Springfield, . .	Outside doors to open out.
Springfield Foundry Company's Block.	Springfield, . .	Additional stairway.
Springfield Street Railroad Company's Block.	Springfield, . .	Fire and smoke stops; additional stairs.
French College Dormitory Block.	Springfield, . .	Outside stairs at each end of building.
Rude & Son's Block, . .	Springfield, . .	Fire and smoke stops; outside stairway.
P. P. Emory & Co.'s Block,	Springfield, . .	Outside stairways.
J. K. Dexter & Co.'s Block,	Springfield, . .	No changes.
C. C. Brunett's Block, . .	Springfield, . .	Fire escape; fire and smoke stops.
H. F. Goodwin's Block, .	West Springfield,	Fire and smoke stops.

DISTRICT No. 8. Eastern and Northern Section — ANSEL J. CHENEY, *Inspector.*

BUILDING.	Location.	Changes Recommended.
City Hall, ...	Haverhill, . .	Main staircase be made ten feet wide; all partitions around stairs made fire-proof; additional egress from gallery; fire stops at every floor.
Jaynes Block, . . .	Haverhill, . .	Additional egress.
Arnold's Block, . . .	Haverhill, . .	Additional egress.
Duncan's Factory, . .	Haverhill, . .	No order.
Check Brothers' Factory, .	Haverhill, . .	Additional egress.
Intervale Factory, . .	Haverhill, . .	Additional egress.
Hoyt, Dow & Kennedy's Factory.	Haverhill, . .	Additional egress and water closets.
Merchants' National Bank, .	Lawrence, . .	Fire stops.
Griffin's Block, . . .	Newburyport, .	Additional egress and fire stops.
Slater's Block, . . .	Lawrence, . .	Fire stops.
Andover Bank, . . .	Andover, . .	Fire stops.
Abbot Academy, . . .	Andover, . .	Fire stops.
Ballardvale School-house, .	Andover, . .	Foul-air stack enlarged equal to three square feet for each room; ventilating ducts from each room to be equal to 432 square inches.

DISTRICT No. 9. — LEMUEL POPE, *Inspector.*

Anthes Building, . . .	Hingham, . .	Additional stairway.
Adams Block, . . .	Quincy.	
Caton Brothers' Shop, . .	Foxborough, .	Additional stairway.
Central Baptist Church, .	Middleborough.	
Central School-house, . .	Milton, . . .	Under side of floor over furnace protected.
Chapel of First Church, .	Braintree.	
Crossett's Shop, . . .	Abington, . .	Additional egress from each end of the building.
Dronan's Block, . . .	Brockton.	
East Weymouth School-house.	Weymouth, . .	Protection for the ways of egress; additional means of ventilation.
High School-house, . .	Norwood, . .	Protect ceilings over furnaces.
High School-house, . .	Hyde Park.	
High School-house, . .	Brockton, . .	Change and better the mode of egress.

DISTRICT No. 9 — *Concluded.*

BUILDING.	Location.	Changes Recommended.
Moore's Block, . . .	Brockton.	
Masonic Building, . .	Stoughton, . .	Additional and better mode of egress.
North School-house, . .	Milton, . . .	Change and better the mode of egress.
Odd Fellows Hall, . .	Weymouth, . .	Fire stops; additional and better mode of egress.
Packard's Block, . . .	Brockton, . .	Additional mode of egress.
Salvation Army Hall, . .	Hyde Park, . .	Another mode of egress.
St. Mary's Temperance Hall,	Quincy, . .	Doors to open out.
St. Paul's M. E. Church, .	Quincy, . .	Additional egress from gallery.
School-house, . . .	Foxborough.	
Sprague School-house, . .	Brockton, . .	Change and better the mode of egress.
Walnut School-house, . .	Brockton, . .	Change and better the mode of egress.
Winthrop School-house, .	Brockton, . .	Change and better the mode of egress.
Whitman School-house, .	Whitman, . .	Protect the ways of egress; additional means of ventilation.
Wollaston School-house, .	Quincy.	
Union Church, . . .	Hyde Park.	

DISTRICT No. 10. — F. W. MERRIAM, *Inspector.*

Universalist Church, . .	Orange, . .	No order.
High School, ...	Williamstown, .	Enclosed stairway on rear side.
Mark Hopkins Memorial, .	Williamstown, .	No order.
Green River School, . .	Deerfield, . .	Change and enlargement in ventilating flues.
Village School, . . .	Buckland, . .	No order.
Berkshire Cotton Company's Mill.	Adams, . . .	No order.
School Building, . . .	Montague, . .	Divide corridors.

A METHOD OF WARMING AND VENTILATING SMALL SCHOOL-HOUSES.

By S. H. Woodbridge, A.M.

In response to a general call for methods of warming and ventilating small school-houses by means not covered by patent rights, and which shall be effective and reasonable in cost, the following suggestions are offered.

For such buildings as are most of our one-room school-houses, and under which there are no accommodations for furnaces, the jacketed stove is well adapted. Descriptions of such stoves and of the necessary accessory arrangements for supplying, diffusing and removing the air are so fully given in books and manufacturers' catalogues, and especially in Dr. Pinkham's late report to the State Board of Health, that no further word is needed in this communication, either of explanation or of commendation of the method.

Among objections to the general use of such stoves are the desirable space they occupy, the obstruction they offer to view, their unsightliness, and the number of fires requiring attention. For these reasons it is generally desirable, whenever practicable, to unite the jacketed stoves in one placed in the basement, under which conditions it is better known as a "furnace." This arrangement has the further advantage of furnishing a motive power for the movement of air exceeding that of separate stoves on each floor, by as much as the column of heated air in the furnace conductors exceeds in vertical length that of the jacketed stove.

A school-house or auditorium furnace should be suited to the movement of large volumes of air through it, and furnished with

ready means for changing at will the temperature of that air without altering the volume of flow; and it should at the same time be economical in the use of fuel, and effective in heating. For economy in fuel the furnace must be one in which combustion is as complete as possible, and also the transference of heat from the combustion gases to the air to be heated; its fire-box should not admit of too deep a fire; the combustion chamber should be of such character and furnished with such required means for the combustion of unburned gases escaping from the coals as to effect their complete burning; the furnace shell between the hot gases and the air to be heated should be of such form on both sides as to insure intimacy of contact between the hot gases and a low-temperature shell on one side, and between it and the air to be heated on the other.

The essentials for obtaining these desiderata are a fairly shallow fire-box; good grates and simple means for effective stoking; a large combustion chamber, and an adequate supply of heated air within it for the burning of the combustible gases; large area of furnace shell, both for absorbing the heat from the hot gases and for yielding the same to the air.

For purposes of ventilation, the free area for air movement through the heating chamber of the furnace should be large, and the whole body of air should be uniformly warmed by contact with a large and moderately heated surface, rather than by the mingling of highly heated air with other volumes of cold air, and so finally imparting to the whole volume the temperature desired. To meet these requirements the furnace must have a large *horizontal* and relatively small vertical extension; its fire-box must be well protected, and the temperature of its shell must be low.

The ordinary house furnace is not well adapted to the work under consideration. Its shell surface is but from twenty to fifty times the area of its grate, whereas the ratio should be more nearly that between the "radiating" surface of a well-proportioned steam system and its grate, or from one hundred and fifty to one, to three hundred to one.

Among the furnaces which most nearly approach the desired type may be mentioned the Smead, the Fuller & Warren, the Mahony, and the Gold "Hygeian Heater." The first three are best known in connection with the systems of which they form a part. The last-mentioned is sold independently; and the purpose of my paper is to describe this furnace, and to show a method of adapting it to the warming and ventilation of small school buildings.

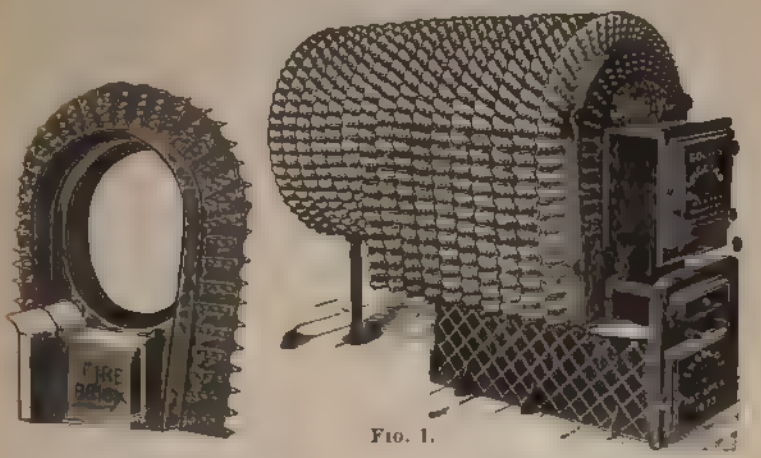


Fig. 1.

As shown in figure 1, the furnace has the general form of a locomotive boiler with fire-box, the cylindrical part being made up of ring sections so joined and secured as to reduce the danger of separation and leakage to a minimum.

Upon the outside of the body of the furnace and of the ring sections, and cast as one piece with them, are corrugated flanges, which are covered with spurs or pins. By this means the area of the "radiating" or outside surface is so increased as to be seven or eight times that of the inside surface, making the ratio of the radiating to the grate surface about one hundred to one, for a moderate extension of the cylindrical part of the furnace.

The maximum size of grate of these furnaces, as now made, is such that for free ventilating work in cold — that is, zero — weather, one furnace cannot provide for more than one hundred or so scholars.

The remaining figures indicate a method of adapting this furnace to the work of school-house ventilation, the plans being designed for the fair ventilation of a building when the outside temperature is at or below fifty degrees, and the inside at seventy degrees.

Figures 2 and 3 show the details of the furnace arrangements. The effective areas of the supply flues should vary with the temperature of the air moving through them, or as their draught power. That area may be controlled by a throttle valve, which, in this case, serves also as a damper for mixing the warm and cold air in proportions necessary for comfort in the rooms supplied by the flues to which the valves belong. The vent from the hot-air chamber has an area equal to one-third that of the flue with which it connects, and the area of vent from the cold-air chamber is two-thirds that of the conduit. The combined area is equal to that of the conduit, and is that required for cool weather; the smaller or hot-air area is sufficient to supply the same volume of air in the coldest weather. The supply conduits have no other dampers or valves than these for the control of air movement through them, or for regulating the temperature of the room.

The mixing valves are manipulated from the rooms by pulls or wire and chain attachments, so arranged as to be secured by simple means in any position for obtaining the supply temperature wanted.

Figure 4 shows a general basement plan. The end towards the front of the building is partitioned off and made to serve as a cold-air chamber, thus avoiding the use of a boxed conduit, and the retarding effect of friction and other obstructions to flow of air through contracted channels.

The furnace and its housing extends through the partition and receives the air through large openings detailed in figures 2 and 3. The outside air enters the cold-air chamber through large windows on three sides, the detailed arrangement for which appears in figure 8.

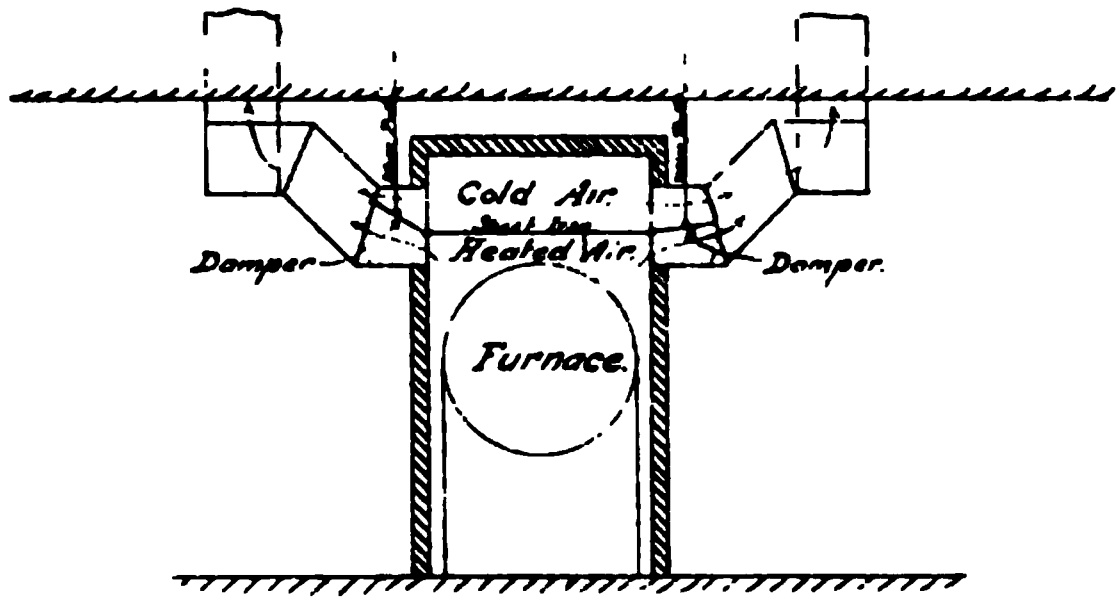

Cold Air
Heated Air
Damper
Damper
Furnace.

Fig: 2.

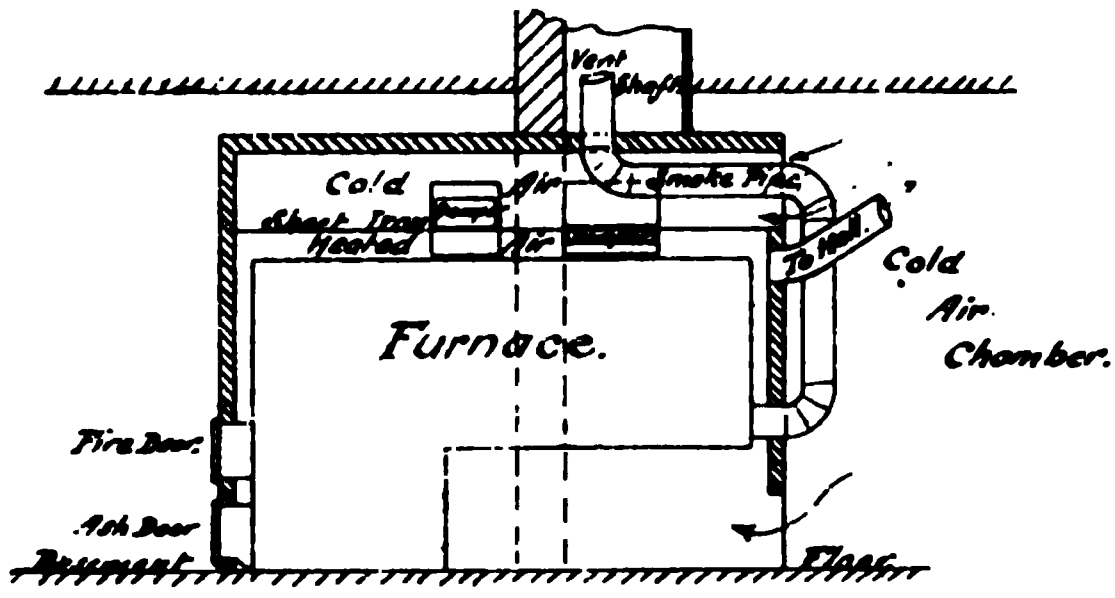

Vent
Shaft
Cold
Air
Heated
Air
To Hall
Cold
Air
Chamber.
Furnace.
Fire Door
Ash Door
Floor

Fig. 3.

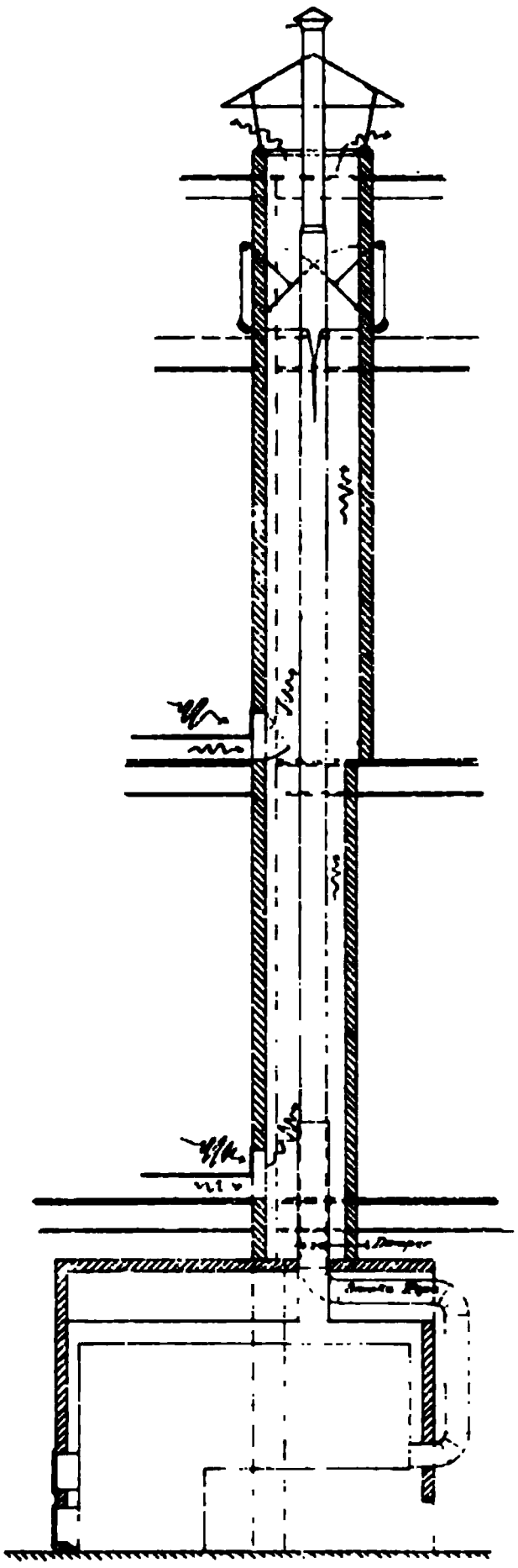


Fig. 7.

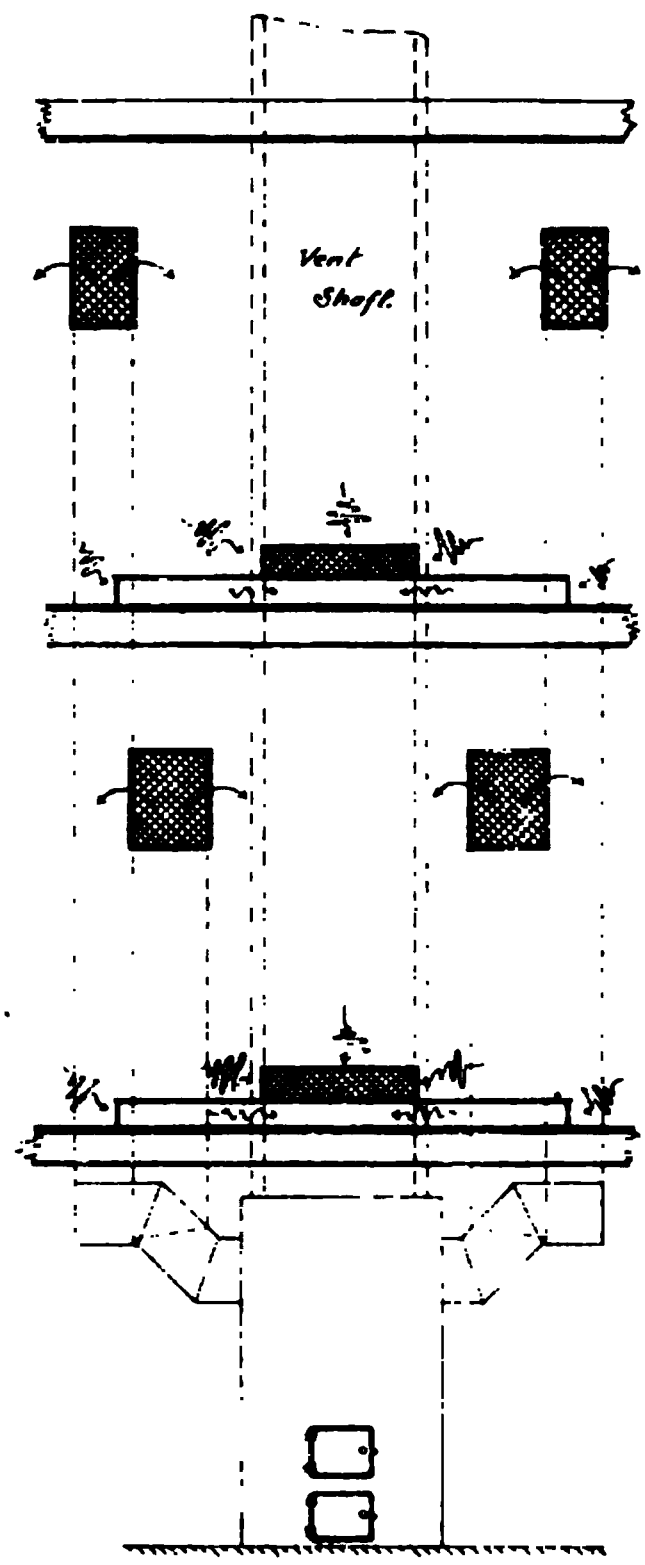


Fig. 6.

Figure 5 shows first-story floor plan. The area of the supply flues shown are such that the required volume of air may be delivered through them when the temperature difference between the out-of-door air and the warm air within the flue is not greater than twenty-five degrees. The flues to the upper floor having the advantage of greater height, the shorter flues must be given a corresponding advantage in increased area. For the lower floor the per capita area of the combined flues should be about one-seventh of a square foot, and for the upper some thirty per cent. less. The foul-air shaft has a per capita area, in cross section, of one-sixth square foot.

As shown in figure 6, the air enters at an elevation on the warmest side of the room. The warm and fresh air floating at the ceiling is brought down to the floor by the chilling effect of the walls and windows, and, moving across the floor from three sides, finds its escape beneath and above the open and movable platform.

In figure 7, the detail of the discharge flue is shown. It may be of wooden construction and tin or metal lined, the advantage of such construction being in its lighter weight and lower cost. The regulating dampers near the top and controlled from the principal's room are for the purpose of closing the flue at night, and of regulating the size of the discharge vent, according to requirements dependent on outside temperature; since a system which is constructed for moving the air volume required for ventilation in cool weather, must be throttled to obtain the same air movement in cold weather, when, in fact, a reduced quantity is required for equally good results. The furnace pipe is enlarged from 8 inches to 10 inches in the flue, in order to get a larger heating surface and a longer retention of the gases.

Figure 7 shows also means for heating the vent flue in warm weather, when the highest temperature is wanted in the flue and the least in the air supply to the school-rooms. At such time, by the opening of a 12-inch damper the heated air from the furnace not needed in the school-rooms may be in part passed into the vent flues. This arrangement avoids the necessity of a separate fire, which is likely to receive small attention unless a more than usually

faithful janitor is in continuous attendance. These figures sho a single ventilating flue for two rooms. A better method whe practicable is to provide independent flues for the rooms.

Figure 8 shows a method of arranging the windows for obtair ing the supply. In quiet weather the air will move inward throug all open windows. In windy weather it may move in strongly o the windward side. and in part outward on the leeward side, unles prevented from doing so by some such means as those shown Flaps of very light gossamer cloth, rubber covered preferred. ma be so placed as to be opened inward by the least pressure o entering air. and to be tightly closed by the slightest reversal o current. The forced current through the windows to windwar may. by this means, be made as effective as the natural inflo through all windows in quiet weather.

There is doubtless some advantage gained in the direction o economy in fuel. and in the time required for heating the room by rotating the air within the building through the furnace, rath than in taking the supply for the furnace from out of doors. I closing the cold-air windows and the discharge-shaft dampers, ar opening the doors from the rooms into the passageways, and fro the lower entry into the basement, such a rotation may be effecte

Figure 9 shows a method of utilizing heat which would oth wise be wasted when cold weather requires forced fires. The ve tilating flue requires the greatest imparted heat in mild weath when the rooms need the least heat. In cold weather the fl requires no imparted heat, and the rooms the greatest heat. such a time the furnace gases may be passed through a coil of pi exposed in the cold-air chamber, the turning of a single damp changing the course of the gases from the short and straight pi to the long and tortuous one.

FIG. 9.

FIG. 8.

Reports of Inspectors.

The following reports of the inspectors contain much valuable information relative to the operations of the industrial and inspection laws, which are especially entrusted to this department to enforce.

District No. 1.

Inspector Eldridge reports: —

Sir: — In making this my first annual report as to the sanitary condition of the factories and workshops, and the observance of the laws relating to the employment of children, guarding of machinery, safety of elevators, etc., in the district to which I have been assigned, I would state that, considering the educational laws as of more importance than any or all the others, my first attention was directed to the enforcement of chapter 348, Acts of 1888, and chapter 433, Acts of 1887. I found many overseers ignorant or negligent of the fact that all children employed must be provided with the form of certificate prescribed in chapter 348, many being at work under the old form. I was informed by the school authorities and by some of the mill agents in Lowell, that many children, some of them having been at work for months under the old form of certificate, when required to procure the new, were unable to do so; the parents, although ready to make a false statement, were not ready to swear falsely. At the present time, while there may be a few cases where overseers, being short-handed, do employ children without the necessary certificate, I am satisfied that the cases are very rare, and that in nearly all the large mills any overseer is liable to discharge for so doing.

The observance of chapter 433, relating to the employment of illiterate minors, has been in most instances well carried out, most of the overseers taking much interest in the attendance of their children at the evening schools, and they have learned from experience that the immediate discharge of boys or girls returning the cards certifying to their attendance through the week unsigned, had a very salutary effect. I was informed by the overseer having the largest number coming under the law, that, of some 120 attending school last winter, 108 exhibited the certificate of regular attendance issued at the end of the term to all entitled to it; and at the commencement of the present term, while a large majority of the same children were still with him, he had found by actual test that nearly fifty per cent. had made such progress as to be exempt from school attendance.

At the beginning of my inspection I found most of the part in charge of children giving the clause "read and write in English language" a very liberal construction, thinking it suffici for the child to write its own name, and perhaps spell out so simple words in large type. Believing that, while the letter of law is indefinite, the spirit required something more, I have in cases insisted on some more rigid test being applied.

I find, on a comparison with the report of last year, a fall off of some twenty per cent. in the number of children betw fourteen and sixteen years, and a still larger decrease in younger ones, employed in the larger factories, many emplo expressing an intent to employ none under fourteen.

The sanitary condition of most of the buildings coming ur the law I have found very satisfactory, although I have fo many instances where the provisions of chapter 103, Acts of 1 as amended by chapter 305, Acts of 1888, were not being comp with. In one or two instances coming under my observatio am satisfied that no radical improvement could be brought al in the matter of removal of offensive odors except by a thoro application of fire.

The statute relating to hours of labor of women and minors I am satisfied, well observed, both from my own observation from absence of complaint.

I have found no instances of fastening of outside doors du hours of labor, except by spring catches or bolts readily oper from the inside.

The guarding of gears, set screws, and other dangerous part machinery, I have found to require constant supervision, espec in the smaller factories, less care being exercised in that res than in the larger ones; and in those using old machinery t is many times a lack of the safeguards found to be necessary applied by the manufacturer of the new. A very common rem made when orders are given to guard the fly wheels or other p of engines, is, "No one is allowed in here but the engineer;" I have found no engineer more ready to part with life or li than other employees. The practice of using set screws in securing of collars on shafts is a dangerous and needless e except in rare cases, a countersunk screw being all that is requi One of the few fatal accidents occurring in my district during past year was undoubtedly caused by the set screw in a colla a small countershaft, the power not being great enough to th the victim over the shaft, but sufficient, through the hold of set screw on the clothing about the neck and shoulder, to b e neck and arm. While making no discrimination in my p

tice of ordering the guarding of machinery in workshops and factories, as a rule I have experienced but little friction. In one case, on applying to a judge for a warrant against the proprietor of a laundry for non-compliance with an order to guard machinery, he informed me that, laundries not coming under the head of factories, he could not issue a warrant.

The elevators in my district I have found or have had placed in good condition, as regards safety appliances, new cables and gears; and there is not now, to my knowledge, one in my territory that is not supplied with some form of safety device, or is in process of being supplied. Not an accident, as far as I am aware, has occurred during the year from the giving way of any cable or gear. I am convinced that the great decrease in percentage of accidents from the number occurring in former years is caused in a great measure by the employment of better hoisting machinery, more frequent replacement of cables, and a better understanding of the dangers attending careless running. In regard to the guarding of elevator openings, none are without some provision. In all cases where there are a large number of employees, especially where women and children are employed, where the openings were not so supplied, I have ordered self-closing hatches, bars or gates; and in all cases where I have found an evident carelessness or neglect to keep other guards in position, I have followed the same course. In several cases where the well was encased, I have caused the ordinary latch to be removed from the door, and some other form of fastening substituted, such as would at once draw the attention of the party using it to the fact of its not being an ordinary door.

Chapter 260, Acts of 1886, would appear to be a dead letter to many manufacturers, my experience being that very few, aside from the large corporations, comply with its requirements. My knowledge of the occurrence of accidents in several instances, and among them one fatal, came to me through the columns of the daily papers.

In regard to the reciprocal feeling between employer and employee, I can only say that my observations, at the best no more than casual, showed no evidence of other than kindly relations between the parties.

In conclusion, I would bear testimony to the spirit of courtesy shown in nearly every instance by employers, and the readiness with which suggestions have been received, as well as the promptness with which orders where given have been carried out, the greater number realizing that the inspectors, who are daily visiting manufacturing establishments, and making a study of dangerous

machinery. elevators, etc., are in better position to determine wl precautions are requisite. than are those whose observations s largely confined to their own building, and whose familiarity w their own machinery has bred contempt for its dangers.

District No. 2.

Inspector JOSEPH HALSTRICK reports: —

SIR: — I herewith make a brief statement of the various ind tries in my district, which comprises Boston and seventeen tow In relation to the reciprocal feeling between employer and emplo of the various factories, workshops and mercantile establishmei I am pleased to state, from personal observation, that unive good feeling and harmony prevailed, more especially in the lai factories. Employees did not apparently seem under any straint, and appeared cheerful generally, which was to me v gratifying.

As regards the operation of the educational law, the observa of its requirements are general. The law has been especially forced in relation to the employment of children. A thoro investigation of my district shows quite a decrease during the y year in the number of children employed under the age of fourt years. Undoubtedly the results attending the enforcement of provisions of the law whereby no children under fourteen year age shall be employed in any in-door work without a school cer cate showing the requisite school attendance of twenty we during the year next preceding such employment, would, in opinion, give such child an opportunity of obtaining the rudim at least of an education. The prohibition of child labor under age of thirteen years has resulted in reducing the numbe children in factories, workshops and mercantile establishme and in sending a large number of them to school, who would ot wise have grown up in absolute ignorance. I think the la strongly indorsed by the party responsible for the employmen such children.

The laws relating to the safety of employees have been stri enforced, and the safeguards that the State has provided for protection of life and limb have achieved good results. The jority of the manufacturers have taken extraordinary precauti to guard all dangerous machinery, and in many instances so tl oughly, that an accident is not likely to occur unless thro culpability of the operatives. I have given special attentio gearing and set screws. The fact is quite evident that expo gears and set screws are especially dangerous. Universal eff

have been put forth by superintendents of factories to guard all dangerous shafting, belting and pulleys by boxing. The laws relating to the safety of employees have been respected, and orders have been cheerfully complied with throughout the district.

The sanitation in factories and workshops is a matter of vital importance. The sanitary law that compels every factory and workshop in which young persons or women, five or more in number, are employed, to be properly ventilated, and also so ventilated as to render harmless, so far as practicable, all the gases, vapors, dust and other impurities generated that may be injurious to health, I have endeavored to enforce. Good results have been accomplished under the provisions of the law, which are manifest in every instance where orders have been given to remedy the imperfections. I cannot recall an instance where manufacturers or owners of buildings have wilfully violated or failed to comply with the provisions of the law.

The water-closets in the majority of workshops in the county of Suffolk were poorly ventilated and not of the cleanest, and used by both sexes. This, however, was the condition shortly after the law was enacted. Some owners of buildings have inclined to move slowly, but the majority promptly complied with the orders given, so that during the past year the conditions have been greatly improved, and no prosecutions have been found necessary.

The elevators in my district, which does not include the city of Boston,* have been invariably constructed in the manner required by law, with the exception of a number found without the proper safeguards required to protect the openings to the well-holes; but measures were at once taken to have them thoroughly protected. The majority of them are used for freight only, and are so designated. The elevators in the district have been provided with some device whereby the car is held, in the event of an accident to the shipper or hoisting rope; and the openings to said elevators have been provided with doors or automatic gates or bars. The act prohibiting the locking of the doors of buildings wherein operatives are employed during the hours of labor have not during the past year been violated, save in one instance, in which case an order referring to the provisions of said act was served upon said party, and its requirements promptly complied with. In conclusion, I desire to express satisfaction with the ready compliance of the manufacturers to the wise and wholesome requirements of the provisions of the various factory laws of this Commonwealth.

* The above refers only to elevators, over which this department has no control in Boston.

District No. 3.

Inspector MULLEN reports: —

SIR: — In chapter 348, Acts of 1888, section 2, there is foun the following clause: "No child under fourteen years of age sha be employed in *any manner* before the hour of six o'clock in t morning or after seven o'clock in the evening." That part section 2 quoted, "shall be employed in *any manner*," refers in great degree to the employment of children in theatres or plac of amusement. During the past year I have visited several su places, and have found children employed contrary to law. every case I have notified the proprietors so employing childr that such children must forthwith be taken from the stage platform where they were on exhibition. In every instance t order has been obeyed, the proprietors showing a willingness comply with the law in all its particulars. There are now evasions of the law as regards children, referred to above.

I will cite one instance where I found on exhibition a you girl whose age could not be accurately ascertained, and who w advertised as "Wild Rose" of Yucatan. On inquiry it was fou that she had been taken from an insane asylum in or about N Orleans, and placed on exhibition under the above-mention name. Being of the opinion that the exhibition of such a pers came under chapter 348, Acts of 1888, the child appearing to not over fourteen years of age, and that such exhibition was co trary to chapter 99, Acts of 1884, I so notified the proprietor the museum in which she was being exhibited, and ordered th she be taken from the stage at once. The order was immediate complied with.

In this connection I have to report that an inspection is ma of the various places of amusement at least once a week. The r sult is that there are now no children under the prescribed age exhibition or performing in any of the places of amusement in t district. The law is beneficial to a large extent, especially becau it not only relates to mercantile, manufacturing and establis ments of like kinds, but to theatres and museums as well.

District No. 5.

Inspector WILLARD reports: —

SIR: — In making this my first report, I wish to state that m duties have been made much easier by the experience and genero assistance of Officer Dyson, which are duly appreciated by me.

In regard to the laws which I am expected to enforce, I desire to say that I have had the most gratifying success. During the year I have issued two hundred and fourteen orders, all of which have been complied with, in nearly every case cheerfully. After such a result there is but little for me to say, except to make a few suggestions which in my short experience have seemed necessary. As I have above stated, all orders have been cheerfully complied with after the laws requiring the same had been explained; yet I have found much ignorance among business men in regard to the laws which I am called upon to enforce. Undoubtedly most of them have read the laws, but in the press of business they have been forgotten, and I am constantly requested to furnish copies of the inspection laws. One of the laws about which there seems to be much misinterpretation is that requiring children's certificates, many of the school committees maintaining that no certificate is needed during the vacation of schools, and even refusing to sign them when presented by the children. It seems to me that the law is too ambiguous, and should be made more plain. The law relating to the employment of minors who cannot read and write the English language I believe to be an excellent one, as far as it goes; but I believe it should be extended so as to compel towns where manufacturing is carried on to any considerable extent to provide evening schools. I have found a marked difference between children where evening schools were maintained and where they were not, and nearly all the employers agree with me that the law is a good one, and are quite willing to comply with it.

In regard to the enforcement of chapter 173 of the Acts of 1886, relating to providing means of communication between rooms in manufacturing establishments where machinery is propelled by steam and the room where the engineer is stationed, I have hesitated about giving such order, from the fact that I cannot see the practical utility of it as a means of saving life in case of accident. I would, however, recommend that a law be passed instead, requiring each room or each line of shafting to be provided with a friction clutch or shut-off. This requirement would allow of the stopping of the machinery on each floor at once (or nearly so), without the unnecessary delay of whistling to the engineer, who might be absent from his machine, or, if present, could only stop it after the wheel had made several revolutions. The cost of such an appliance would not much exceed that of electric bells or speaking tubes, and I think it would be much more effective as a means of saving life in case of accident.

As to the enforcement of all the laws relating to the employment of women and children in my district, I believe them to be

as fully complied with as any upon the statute book. I have had a few complaints from small isolated factories, but each case has been rectified without prosecution. In the matter of sanitation in factories, I would say that many in my district were built many years ago, and without much regard to their sanitary arrangements, especially in the matter of ventilation; but I believe that good progress is being made in that direction. It would be difficult to find, in my district, a factory where separate water-closets properly marked, for men and women, are not provided. As to safety of elevators, I would say that most of them seem to be in good condition, and there seems to be a growing inclination among manufacturers to provide some one whose sole duty is to attend to the running of the elevator, which is a move in the right direction. Most of the elevators are well guarded. Most of the factories in my district are well supplied with means of egress, and the proprietors seem anxious to show the inspector what they have done in that direction. In regard to the locking of doors during working hours, there are some factories whose location makes it necessary to have some means of keeping applicants for work and strangers from interrupting and bothering the help. In a few such cases I have found spring locks, which could be readily opened from the inside, but prevented admission from the outside.

In conclusion, I wish to state that with but few exceptions I have been treated with courtesy by the manufacturers with whom I have had business.

District No. 6.

Inspector HAMMOND reports: —

DEAR SIR: — In addition to the tabulated report which I have forwarded, I wish to make a statement in regard to the working of the laws which I am called on to enforce. Chapter 348, Acts of 1888, an act in relation to the employment of children, calls for a great deal of time and care on the part of an inspector. The overseers of the factories have their orders from the superintendents not to employ children unless they have proper certificates. Frequently, however, I find children under sixteen years of age employed in the mills without proper certificates. I am required by section 8, chapter 348, to give notice in writing to the parties concerned that I shall proceed against them unless they comply with the law. This notice has the desired effect, and the certificates are procured, or the children discharged.

I find, by the inspector's report for 1888, that there were employed in Fall River 1,121 children between the ages of fourteen

and sixteen, and 153 children between the ages of thirteen and fourteen. By my report you will find that there are employed the present year at the same factories 945 children between the ages of fourteen and sixteen, and 118 children between the ages of thirteen and fourteen, showing a decrease of 211 for the year 1889 in children under sixteen years. I think that the tendency now is not to employ children under fourteen years of age.

The act relating to the employment of minors who cannot read and write the English language meets with favor by employers generally, and some are very much interested in educating their employees. Where the evening schools are kept open four evenings a week, some of the minors that are required to attend think it a hardship, and some have absolutely refused to attend. These latter were immediately discharged.

Complaint is often made in this district of running overtime when there is no just cause for it. I have repeatedly taken the running time of mills said to be violating the law, and found that they did not vary one minute from schedule time. I asked a weaver at a mill in Fall River, "Do you run overtime here?" He said, "Yes; I 'll tell you how it is. We shut down at 12.20 Saturdays, and in order to do so we have to run overtime the other days of the week." I then asked, "Do you call running until 12.10 at noon and 6.10 at night running overtime?" His answer was, "Yes." I told him that the mill was running by its schedule time, and it was perfectly legal. I have found but one instance where women or minors have worked over sixty hours any one week, and that was caused by a mistake of the overseer.

The laws relating to the safety of employees are cheerfully complied with, and employers are anxious that a thorough inspection of machinery, especially of elevators, should be made. I have found very few elevators which have not some kind of safety device attachment, in good working order. In the case of all elevators that I have found which were not constructed in the manner required by law, either their use has been discontinued, or some safety device has been applied to them.

District No. 7.

Inspector KNIGHT reports: —

DEAR SIR: — I have the honor herewith to submit the following report in regard to the laws intrusted to me for enforcement in District No. 7, which comprises Hampden and Hampshire counties.

The law relating to the employment of women and children,

known as the "ten-hour" law, has been complied with in a ver satisfactory manner, except in one case, where, one part of th machinery getting ahead of the other, that portion of the machi ery which was behind was run for a few nights; but, after notic was given to the person in charge, it was stopped at once, and n further complaints were made. Throughout this district the seems to be a general satisfaction on the part of the employed an employers, regarding the enforcement of the law.

The law forbidding the employment of children under thirte years of age in factories, workshops and mercantile establis ments, has been well complied with, although three cases we found where the children were employed during the vacation the public schools, the parties employing them not knowing th the law forbade the employment of such children during vacatio On being notified, the children were discharged. The number children between thirteen and fourteen years of age employed the factories has been greatly reduced in the past few yea owing, I am told, to the shortness of the time they can employed before they are obliged to go out to attend schc again; therefore, there have been found but few cases where th law has been violated. On the whole, I think it has been w lived up to in this district.

The law relating to the employment of children between t ages of fourteen and sixteen has been satisfactorily complied wit There have been, however, a few cases found where they were work without proper certificates on file; but in all such case when attention was called to the fact, certificates were obtaine The good results of this law are acknowledged by all who und stand its intent, and appreciate a fair education for all; and I a glad to say that all who employ such persons heartily co-opera with the inspector, thus making the work much easier, and at t same time insuring better results.

Since the evening schools commenced, I have devoted consid able time to the enforcement of chapter 433, Acts of 1887, relati to the employment of minors who cannot read and write in t English language; and, as a result, in some of the cities an towns in my district where evening schools are maintained, t schools will be larger than ever before. The employers, superi tendents of schools, and school committees, in all cases, co-opera heartily with the inspector in this work. The employers ha notified all who come under the law that they must attend t schools regularly, if they wish to retain their positions. The e forcement of the law is not only having a good effect upon t attendance of the schools, but the superintendents report bett

interest manifested by the pupils. Many of those who were very reluctant to attend before now seem to look forward to the schools with pleasure.

Sections 13 and 14 of chapter 104 of the Public Statutes, relating to the protection of machinery and elevator openings, have been cheerfully complied with in all cases. The manufacturers seem to thoroughly appreciate this law, and in many cases, when their attention has been called to the defects, they express surprise that it had not been observed by them before, saying, "It shall be attended to at once," and often express a desire that the inspector himself make a thorough inspection of their mills as often as possible, as it was for their interest to have all places found dangerous to be as well guarded as possible.

There has been but one serious accident by elevators in my district during the past year, and this case in no way could be attributed to the unsafe condition of the elevator, or any of its parts, as it was found in good condition, and as well guarded as is possible, directly after the accident occurred. In my judgment, there is no machinery in common use that is more dangerous than the elevator, although there have been made in the past few years many important improvements in the hoisting machinery and safety devices for elevators, which, perhaps, have been due in a measure to this department; but, by reason of the haste of mankind to "get there" without loss of time (as time is money), the elevator manufacturers have endeavored to increase the speed, and have, to such an extent that it seems to me to be dangerous, although we are told that it is just as safe. The parties controlling such machinery have often been notified of the importance of constant watchfulness of all parts of the machinery and hoist ropes, and in many cases they are inspected at least once a week by competent workmen.

The law relating to the sanitary condition of factories and workshops has been greatly improved during the past year. In all cases where better sanitary provisions were found necessary, orders have been sent, and they have been complied with. I find that there is great difficulty in keeping the sanitary provisions in factories always in proper condition; especially is this the case in some of the larger mills, owing in some measure, perhaps, to the carelessness or indifference on the part of some of the operatives themselves, and therefore, in order to keep them in good condition, it requires constant watchfulness and care on the part of the superintendents and overseers.

The act prohibiting the locking of doors in buildings wherein operatives are employed during the hours of labor is very well

complied with in this district. I have had occasion to issue but two orders during the past year, and I am glad to be able to report that they were complied with at once.

District No. 8.

Inspector OSGOOD reports: —

SIR: — The laws of this Commonwealth which I, as an inspector am called upon to enforce, are being well complied with in this district, comprising the county of Essex. There is a disposition on the part of the employers to comply cheerfully with the requirements of statutes regarding the employment of labor, it being a rare occurrence for an inspector to go into a manufacturing establishment and not find a schedule regulating the hours of labor posted as is required. Factories where textiles are manufactured require, generally speaking, the full sixty hours per week, working more hours five days, in order to give a short day on Saturday; and this plan seems to give universal satisfaction to the employed. The shoe industries which are largely engaged in throughout the district employ their female help by the piece to a great extent, and are not obliged to work a specified number of hours. They will average, however, about fifty-two per week when business is good. Notwithstanding this, the employer has complied or does cheerfully comply with the requirements, and schedule of time is not more than fifty-nine per week.

Chapter 150, Acts of 1882, regarding persons or corporations providing suitable seats for the use of females employed, I find universally complied with.

Evening schools during the last season were well attended, and bid fair to have as good an attendance this.

Chapter 104, Public Statutes, as amended, of the inspection of buildings, I find pretty generally observed. If the belting, shafting, gearing, etc., are found improperly guarded, or not guarded at all, the attention of the employer is called to the fact; in many cases a suggestion from the inspector will bring the desired result, without the written order.

Regarding elevator well-holes, I would respectfully recommend that, after June 30, 1890, all elevators for freight shall be provided with automatic hatches, to prevent persons falling through the hatchways or well-holes, also as a preventive against the spreading of flames in case of fire; gears to be placed in upper story of building, and provided with double cables; that bells or gongs be placed at proper distances near every landing in the

elevator well, to warn all persons about to use the elevator and all persons near it, giving its location or its descent, when being operated. Substantially, this is as recommended by my respected predecessor in 1887.

Explosive or inflammable compounds are not found to be used or kept in factories or workshops, in such manner or places, as would render hazardous the egress of employees in case of fire. But a small quantity of such compounds is kept on hand at any one time, and this in a small building outside the workshop, a day's supply only being allowed inside.

The law in regard to the locking or bolting of doors in buildings where operatives are employed, so as to prevent free egress in case of fire during the hours of labor, is complied with very generally, only two cases being brought to my attention during the year.

Chapter 348, Acts of 1888, regarding the employment of children. Rarely are children under fourteen years of age found employed in this county, the disposition being to employ over that age rather than under. Employers agree, as a rule, that the place for young people under the age of fourteen is in the school-room during school hours. Some are of the opinion that fifteen or even sixteen is young enough at which to commence work. In this connection, I would suggest that fourteen years of age be the lowest limit at which a child can be employed, instead of thirteen, as now incorporated in said chapter; also, the requirement of twenty weeks' schooling be extended to fifteen years of age.

Relating to sanitary appliances. These arrangements, in textile industries, I have always found in excellent condition. In the shoe industries closets are not found in such cleanly condition. I will not include all, as some are in a very good state of cleanliness, while others, who have as good accommodations, are not kept in that condition which is conducive to health and decency. In one instance, a large and wealthy owner of property felt very much aggrieved because he was compelled to furnish an extra closet for the exclusive use of the female employees of a workshop, which common decency should have prompted him to provide, without the order from an inspector. The number employed in this factory was fifty-six, males and females about equally divided, and only one closet. Those buildings erected as workshops and factories since the creation of this law are well supplied with sanitary arrangements, and the most of them are kept in a good, cleanly condition. I am in hopes, by next return, to be able to show a marked improvement in this direction.

I am pleased to accord to mill superintendents and agents, and

the employers of labor generally in the district, a disposition t assist me in my tours of inspection, to their fullest possible extent Local inspectors and truant officers have rendered me very valuabl assistance in many ways.

District No. 9.

Inspector JAMES H. CHADWICK reports:—

SIR:—The following report is respectfully submitted as to th condition of the 9th inspection district, of which I am one of th inspectors.

In answer to your request for a statement in regard to th reciprocal feeling between the employer and employed, I feel tha to properly present the subject, I must go back to the past, o account of the great change that has taken place during the la three decades. In going back and comparing the connection, c rather the distance, then and now, it is plain that some wel directed power has been at work. Then there was an almost in passable gulf between them, which at the present time has bee so reduced that they can clasp hands across it. Then the ma who had the boldness to demand to have what he might call wrong made right, would often have his boldness rebuked by hi prompt discharge. Then men and women in textile manufactorie worked seldom less than seventy-two hours per week, and to m own knowledge as high as seventy-eight and eighty-four hours i one week; and I have seen children of the tender age of nin years thus employed. Then labor had few chances for anythin but work. Some powerful factor has changed it all, and bot meet and treat with each other to their mutual benefit. Agitation organization, an increased intelligence, with wholesome laws, hav put the laborer upon a plane that years ago had he aspired t would have been looked upon as a freak of his imagination There are but few corporations in this district, therefore the work men can adjust their differences directly with their employers. I brings them into close communion, and elevates the one withou debasing the other. Capital and labor are both very sensitive a to their rights, but in this district both seem to have found tha mutual concessions are far better than strife. Therefore, I fee that, with very few exceptions, the best of feeling exists betwee the employer and employed.

You also request my observations in regard to the educationa laws. In that respect my mind is the same as in my last report I find very few that desire to employ those that come under th school laws, and not one of them in manufacturing establishments If there can be found boys in this district out of school who ought

to be in school, they are boys whose parents willingly and I might say wilfully permit them to remain at home, or oftentimes allow them to loaf about stables or on the streets. The law states that the parents or guardians who may violate the laws as to the education of those under them, shall be punished by a fine not exceeding twenty dollars. I never have known of a case in court; but in almost every town in this Commonwealth may be found children who, for some reason, and probably by some one's neglect, are growing up in ignorance and often in vice. I believe it to be more the fault of the town officers than of the inspectors, who only have authority to prevent their employment *in-doors*. If but two in a town, you can see that upwards of six hundred are thus losing the education that is so freely offered them. I believe that every man who may read this report can recall to mind some boy to whom this may refer. Perhaps a vigorous application of legal suasion by truant officers would result in an improvement.

As to the sanitation in workshops and factories, the condition is far from satisfactory, not only to the inspector, but to the owners and employees. The desire to have the condition better is not lacking, but the greatest excuse is lack of proper sewerage, when we find in the large cities near the seaboard, with good sewer connections, and with an ample supply of water, a sanitary condition in many cases which is at least most disagreeable, if not dangerous to health. We feel that some forbearance must be used, in those inland towns that are lacking of any means of removing the waste material, only at a great cost to individuals who may be particularly interested in the welfare of their employees, or the occupants of some tenement house. There is more willingness to improve than there is ability to carry out plans that might be adopted, if a well-constructed sewer extended through every town to tide-water, or some other suitable place where it could be deposited and utilized or absorbed.

As to the safety of the employees in factories, the safety of elevators, etc., no serious accident has occurred in this district during the year; at least, none have been reported in any factory or workshop. The machinery is fairly well guarded, and safeguards are being added every year. The freedom from accidents with elevators I attribute not so much to additional safety devices, as I do to the fact that more attention is paid to the hoisting machinery, cables and oiling, also to the fact that most factories have one person to attend to the elevator, where formerly inexperienced persons would have the handling of it.

The doors in the factories are often locked to prevent admission from the outside, but I do not know any place where they are locked in such a manner as to prevent egress during working hours.

The main subjects in this brief report are such that only fa more space than can be used could do them justice. The work o the inspector, however well he may think he has done it, is suc that, after he has done his best, he can go over the same groun the next year, and find enough more to make him think he wa careless on his previous visit. The enlarging of the buildings changing the old for new and improved machinery, changes o superintendents or agents, all combine to make him feel that hi work is never entirely done, and he can always see many thing that he would like to have improved. At times the best of ou labor laws are disregarded by those whom they are most intende to benefit.

Courteous treatment has always been accorded the inspector i this district, and in my investigations I have in all cases been me with a perfect freedom to impart the knowledge desired, both fro the employer and employed. I also believe that, in point of intel ligence and ability to earn money and care for it, the working me and women of Norfolk and Plymouth counties are the peers o any in our land.

District No. 10.

Inspector MORTON reports: —

SIR: — In making this my first report I am pleased to say think the laws which I am called upon to enforce are very generall complied with. I will first refer to chapter 348 of the Acts o 1888, an act in relation to the employment of children. I find i nearly all the manufacturing concerns in this district, where chil dren are employed, a desire on the part of those persons employin them to live up to the laws. I find but few minors who do no have certificates. I have found but two minors between the age of thirteen and fourteen during the past year who did not hav certificates, and they worked only during vacation, thinking, a it was vacation, they did not need one. I find but few betwee the ages of fourteen and sixteen without certificates. The reaso of those not having them in most cases has been the mistaken idea that the school certificate answers the purpose of an age certificate. In a number of manufacturing concerns in this district the overseers are notified by the persons employing them, that, if they employ minors without a certificate, they must take the consequences and pay all fines. In some of the small towns I have found a number of the certificates improperly made out, thereby causing the children to get new ones, sometimes making them a great deal of trouble, the person making out the certificate living a mile or two away. Now, if the person who makes out the certificate

would be a little more careful to see that the certificate complies with the law, it would save the inspector some work, and the child a great deal of unnecessary trouble. I have found several cases that will come under this head.

The law in regard to illiterates cannot be used much in this district, as we have but two towns that come under it, where the law obliges evening schools to be maintained. I find but very few illiterate minors where evening schools are maintained. I find some in towns where there are no evening schools. Now, if the law could be made to reach such towns, I think great benefit would be derived from it.

In regard to the laws relating to the hours of labor for women and children, a case of overtime is seldom found or even reported. I have had but one complaint in the past year, and that from a man who had been discharged, and wanted to get even with his employers. I investigated the matter, and found no grounds for complaint.

The laws in relation to the guarding of machinery have been very generally complied with. There have been very few accidents in this district during the past year, and none of them fatal. In most cases where accidents have happened, I think the causes have been want of proper care on the part of the ones injured.

The laws regarding safety of elevators are well complied with, all having some kind of a safety device; and elevator openings are guarded either by automatic hatches, gates, doors or bars, and most of them have wire cables. Have had occasion to order repairs on but four or five during the past year.

I have found but one case of locking outside doors, and that was in a concern that had been running but a short time. They readily complied with the order to provide free egress.

Summary of Inspection Work.

The records of this department show that 2,425 manufacturing, mercantile and public buildings, hotels, tenements and apartment houses have been inspected since my last annual report.

In consequence of such inspections, it has been deemed necessary to issue orders calling attention to defects, and specifying required changes, etc., to the number of 1,547.

In addition to the number of inspections made, visits for the purpose of investigating complaints, and to ascertain if orders issued by the inspectors had been complied with, number 1,410.

LIST OF PUBLIC BUILDINGS, FACTORIES, WORK-SHOPS, TENEMENT HOUSES AND HOTELS,

INSPECTED FROM JAN. 1, 1889, TO DEC. 31, 1889.

TOWN OF ABINGTON.

NAME OF BUILDING.	Orders given.	Compliances.
Lyon's Shop,	Additional egress.	
Standish Block,	Improved egress and fire extinguisher.	
Cleverly's Block,	Additional egress and fire extinguisher.	
Arnold's Shop,	Additional and improved egress.	
Centre School-house,	Improve or change sanitaries, and additional ventilation.	

TOWN OF ADAMS.

Liberty Street School,	Better sanitary conditions and ventilation.	Transferred to Zylonite School.
Commercial Street School,	Better sanitary conditions and ventilation.	Improved.
Renfrew School,	Better sanitary conditions and ventilation.	
Maple Grove School,	Better ventilation.	
Hoosac Street School,	No order.	
Zylonite School,	Better ventilation; order transferred from Liberty Street School.	In process of compliance.

TOWN OF AMHERST.

H. D. Fearing Company,	Two fire escapes.	Complied.
Hills Company,	Fire escape.	Process of construction.

TOWN OF ANDOVER.

Name of Building.	Orders given.	Compliances.
Punchard School, . . .	Better sanitary; additional ventilation; remove combustible material from under stairs.	Complied.
Old Grammar School, . . .	Additional ventilation.	Complied in part.
New Grammar School, . .	Additional ventilation.	
Abbott Village School, . .	Swing doors out.	Complied.
Abbott Village Primary School,	Swing doors out.	Complied.
Ballardvale School, . . .	Discontinue the use; unfit for school purposes.	Complied.

TOWN OF AVON.

Gifford School-house, . . .	Improve egress, and additional ventilation.	Egress complied.
Littlefield School-house, . .	No order given.	

TOWN OF BELMONT.

High School, ...	For better ventilation.	
Centre Primary School, . .	For better ventilation.	
Brighton Street School, . .	For better ventilation.	
Waverly School, . . .	For better ventilation.	

TOWN OF BERNARDSTON.

District No. 2 School, . .	Better ventilation.	
Powers Institute, . . .	Better ventilation.	Complied.
Town Hall, ...	Better ventilation.	

CITY OF BOSTON.

Adams School, ...	To improve ventilation and sanitary arrangements.	Not complied.
Austin School, ...	To improve ventilation and sanitary arrangements.	Not complied.
Chapman School, . . .	To improve ventilation.	Not complied.
Lyman School, . . .	To improve sanitary arrangements.	Not complied.
Webb School, ...	To improve ventilation and sanitary arrangements.	Not complied.

CITY OF BOSTON — CONCLUDED.

NAME OF BUILDING.	Orders given.	Compliances.
Webster Street School, . .	To improve ventilation and sanitary arrangements.	Not complied.
Ingraham School-house, . .	To provide means of ventilation.	
Freeman School-house, . .	To provide means of ventilation.	
Baldwin School-house, . .	To provide means of ventilation.	
Grant School-house, . . .	To provide means of ventilation.	
Phillips School-house, . .	To provide means of ventilation.	
Sharp School-house, . . .	To provide means of ventilation.	
Baldwin School-house, . .	To provide means of ventilation.	
Wells School-house, . . .	To provide means of ventilation.	
Emerson School-house, . .	To provide means of ventilation.	
Winchell School-house, . .	To provide means of ventilation.	

TOWN OF BRADFORD.

Greenleaf School, . . .	Keep a fire in base of stack at all times when heat furnace is not running.	Complied.
High School, ...	Additional ventilation; swing doors out.	Complied in part.
Kimball Street Primary School, .	Additional ventilation; swing doors out.	Complied.

CITY OF BROCKTON.

Enterprise Building, . . .	Additional and improved egress and fire extinguisher.	
St. Patrick's Church, . . .	Additional and improved egress.	Complied.
Joslyn's Block, ...	Additional egress and fire extinguisher.	Complied.
Field's Block, ...	Additional egress and fire extinguisher.	
City Block, ...	Additional egress and fire extinguisher.	
Spring Street School-house, .	Improved egress and additional ventilation.	In process.
High School-house, . . .	Improved egress and additional ventilation.	In process.
Sprague School-house, . .	Improved egress and additional ventilation.	In process.

CITY OF BROCKTON — CONCLUDED.

NAME OF BUILDING.	Orders given.	Compliances.
Winthrop School-house,	Improved egress and additional ventilation.	In process.
Howard's Block,	Improved egress and fire extinguisher.	
Kingman's Block,	Additional egress and fire extinguisher.	Complied.

TOWN OF BROOKLINE.

Boylston School-house,	To improve sanitary arrangements.	Complied.
Fern's Boarding-house,	Fire escape.	Complied.

TOWN OF BUCKLAND.

Village Grammar School,	Better ventilation.	Complied.
Village Primary School,	Better ventilation.	Improved.

TOWN OF BYFIELD.

Centre Grammar School,	Improve the ventilation.	
Town Hall,	No order.	

CITY OF CAMBRIDGE.

Conservatory Hall,	-	-
Odd Fellows Hall,	For door, for fire stop, and for means to extinguish fires.	Complied.
Willard School,	For better ventilation.	
Masonic Hall,	For fire escape, doors to open out, and means to extinguish fires.	Complied.
Boardman School,	-	-
Allston School,	For better ventilation.	
Sargent School,	-	-
Shepard School,	For better ventilation.	
Peabody School,	For better means of egress in case of fire.	
Hotel Luke,	For fire escape.	Complied.
Washington School,	Better sanitary provisions and ventilation.	

TOWN OF CANTON.

Name of Building.	Orders given.	Compliances.
Crane School-house, . . .	Improved egress and additional ventilation.	Egress complied.
Gridley School-house, . . .	Improved egress and additional ventilation.	Egress complied.
Sherman School-house, . .	Improved egress and additional ventilation.	Egress complied.
Elliott School-house, . . .	Additional egress and additional ventilation.	Egress complied.
High School-house, . . .	Improved egress and additional ventilation.	Egress complied.
Revere School-house, . . .	Improved egress and additional ventilation.	Egress complied.
Parochial School-house, . .	No order given.	
Town House, ...	No order given.	
Ponkapoag School-house, . .	Improved egress and additional ventilation.	Egress complied.

TOWN OF CHARLEMONT.

Village School, ...	Better ventilation.	

CITY OF CHELSEA.

Broadway School, . . .	To improve ventilation.	Complied.
Bloomingdale Street School, .	To improve ventilation.	Complied in part.
Carter School, ...	To improve ventilation.	Complied.
Central Avenue School, . .	To improve ventilation.	Not complied.
Highland Street School, . .	To improve ventilation.	Not complied.
Spencer Avenue School, . .	To improve ventilation.	Not complied.
Shurtleff Primary School, . .	To improve ventilation.	Complied.
Williams School, ...	To improve ventilation.	Not complied
City Hotel, ...	Additional means of egress.	Complied.
Fremont Block, ...	Fire escape.	Complied.
Pythian Hall, ...	Additional means of egress.	Complied.
Review Club House, . . .	Fire escape.	Complied.

TOWN OF CHESHIRE.

Name of Building.	Orders given.	Compliances.
Cheshire Academy, . . .	Better sanitary condition and ventilation.	Improved,

TOWN OF CONCORD.

Emerson School, ...	-	-
High School, ...	-	-

TOWN OF CONWAY.

Town Hall, ...	No order.	

TOWN OF DALTON.

Centre School, ...	Better sanitary condition and ventilation.	Improved.
Centre Primary School, . .	Better ventilation.	Improved.
Craneville School, . . .	Better sanitary conditions and ventilation.	Improved.
Grammar School, . . .	Better sanitary conditions and ventilation.	To be abandoned.
Union Block, ...	Additional egress.	In process.

TOWN OF DEDHAM.

Memorial Hall, ...	Improved egress.	Complied.
High School-house, . . .	Additional ventilation.	Egress complied.
Ames School-house, . . .	Additional and improved egress, and additional ventilation and fire extinguisher.	Egress complied.
Hotel Dedham, ...	Additional egress and fire extinguisher.	Partly complied; vacated.
Quincy School-house, . .	Additional ventilation.	
Avery School-house, . . .	Additional ventilation.	
Oakdale School-house, . .	Additional ventilation.	
Endicott School-house, . .	No order given.	
Riverdale School-house, . .	Additional ventilation.	

TOWN OF DEDHAM — CONCLUDED.

NAME OF BUILDING.	Orders given.	Compliances.
Dexter School-house,	Additional egress and additional ventilation.	
Colburn School-house,	Additional egress and additional ventilation.	
Islington School-house,	No order issued.	
Highland School-house,	Additional ventilation.	
Boys' Home,	Additional egress and fire extinguisher.	Complied.

TOWN OF DEERFIELD.

Green River School,	General repairs and enlargement advised.	To be carried out.
Chapel Hall,	To swing doors out.	Complied.
Town Hall and Schools,	To swing doors out. Better ventilation.	Complied in part.

TOWN OF DUXBURY.

Standish House,	Additional egress, colored lights, gong, fire extinguisher.	

TOWN OF EASTHAMPTON.

High School Building,	Better ventilation.	Improved.
Chapel Street School,	Better ventilation.	

TOWN OF ERVING.

Town Hall,	No order.	
Village School,	Better ventilation.	

TOWN OF EVERETT.

Locust Street School,	For better sanitary provisions and better ventilation.	
Y. M. C. A. Hall,	For better provision to prevent spread of fire in stairways.	
Broadway School,	-	-

TOWN OF FRAMINGHAM.

Name of Building.	Orders given.	Compliances.
Grand Army Hall, . . .	Means of extinguishing fire.	Complied.
South Framingham Grammar School.	No orders given.	
Third District Brick Schoolhouse.	No orders given.	
Nobscott Block, ...	Fire escapes. Doors swing out. Means of extinguishing fire.	Complied.
Proctor House, ...	Fire escape. Steam pipes protected. Means of extinguishing fire.	Complied.
Odd Fellows Block, . . .	Means of extinguishing fire. Doors to open out.	Complied.
Town Hall, ...	Doors to swing ont. Stairways kept clear.	Complied.
Normal Hall, ...	Fire escapes. Means of extinguishing fire.	In process of compliance.
Crocker Hall, ...	Fire escapes. Means of extinguishing fire.	

TOWN OF FRANKLIN.

High School, ...	Better egress. Doors to swing out. Steam pipes protected.	Complied in part.

TOWN OF GEORGETOWN.

High School, ...	Remove all combustible material from under stairs. Additional ventilation.	
Brick Grammar, . . .	Additional ventilation.	
No. 5 Grammar, ...	Swing doors out. Additional ventilation.	

CITY OF GLOUCESTER (MAGNOLIA).

Hesperus House, . . .	Electric gongs. Fire pails.	Complied.
Ocean Side House, . . .	Electric gong, red lights, notices, and watchman.	Complied.
Sea View House, . . .	Portable fire escapes and fire pails.	
Crescent Beach House, . .	Electric gongs.	
Oak Grove House, . . .	Individual fire escapes. Fire pails.	Complied.
Sprague Cottage, . . .	Fire pails.	Complied.

TOWN OF GILL.

Name of Building.	Orders given.	Compliances.
Recitation Hall, Mt. Hermon, .	No order.	
Crossley Hall, Mt. Hermon, .	Fire pails in third and fourth stories.	Complied.

TOWN OF GREAT BARRINGTON.

Town Hall, ...	Additional egress from gallery. Fireproof curtain.	Complied in part.
High School, ...	Better ventilation.	Complied.
Primary School, ...	No order.	Abandoned.
Sumner Block, ...	Additional egress.	Hall closed.
Whiting Block, ...	Additional egress.	Complied.
Central Block, ...	Additional egress from small hall. Swing doors out. Fireproof curtain. Fire pails.	Complied.
Housatonic School, . . .	Additional egress. Better ventilation.	Complied.
Van Deusen Building., G. A. R. Hall.	Additional egress.	Complied.

TOWN OF GREENFIELD.

Greenfield Opera House, . .	No order.	
High School, ...	Better sanitary condition and ventilation.	
Grammar School, . . .	Better sanitary condition. Additional ventilation.	Transfer'd to Union St. School and complied.
Chapman Street School, . .	Better sanitary condition, and ventilation. Additional egress by enclosed stairs.	
Main Street School, . . .	Better sanitary condition and ventilation. To swing doors out.	Complied.
Franklin County Court House,	Better sanitary condition and ventilation.	
Taylor Block, ...	Means for extinguishing fire in third story.	Complied.
Masonic Hall, ...	Fire escape. Means for extinguishing fire.	Complied.
Sanborn Block, ...	Fire escape. Means for extinguishing fire.	Complied.
Hollister's Building, . . .	Additional egress. Fire pails.	Complied.

CITY OF HAVERHILL.

Name of Building.	Orders given.	Compliances.
Academy of Music,	Hand rail on fire escape stairs, and additional rail in upper balcony. Portable means for extinguishing fire on stage.	Complied.
Noyes Block,	Fire escape. Portable means for extinguishing fire.	Complied.
Nichols Factory,	Fire escape. Portable means for extinguishing fire.	Complied.
Appleton Estate Block,	Fire escape. Portable means for extinguishing fire.	Complied.
Jaques Block,	Additional egress.	Complied.
French Catholic School,	Additional urinals and water-closets. Better ventilation. Portable means for extinguishing fire.	
Bowley School,	Improve ventilation by fire in base of stack.	Complied.
Chestnut Street School,	Portable means for extinguishing fire.	Complied.
Groveland Street School,	Improve ventilation by fire in base of stack.	Complied.
Currier School,	Additional egress. Better means of ventilation. Portable fire extinguisher.	Complied in part.
Whittier School,	Better sanitary arrangements.	Complied.
Fitts Block, 100 Merrimack St.,	Fire escape. Portable means for extinguishing fire.	
Fitts Block, 90 Merrimack St.,	Fire escape. Portable means for extinguishing fire.	
Nichols Factory, 5 Kimball Pl.,	Fire escape. Portable means for extinguishing fire.	
Winchell's Factory,	Portable means for extinguishing fire.	Complied.
Washington Block,	Additional egress. Portable means for extinguishing fire.	
Adams Shoe Factory,	Fire escape and portable fire extinguisher.	

TOWN OF HINGHAM.

Lincoln Building,	-	-
Anthes Building,	Additional egress. Fire extinguisher.	
Whiton Building,	-	-

TOWN OF HINSDALE.

Name of Building.	Orders given.	Compliances.
Church Street School, . .	Better ventilation.	Improved.
High School, ...	Better ventilation.	Improved.
Town Hall, ...	No order.	

CITY OF HOLYOKE.

Whiting's No. 2 Paper Mill, .	Fire escape.	Complied.
Lyman Mills, ...	Fire escape.	Complied.
Johnson's Block, . . .	Two fire escapes.	Complied.
Beebe & Holbrook Mill, . .	Fire escape.	Complied.
J. S. Carr's Block, . . .	Balconies in the rear to be connected by stairs.	Complied.
W. H. Pryer's Block, . .	Balconies in the rear to be connected by stairways. Balconies on side.	Complied.
William Potvin's Block, . .	Balconies to be repaired and connected by stairs.	
William Skinner's Silk Mill, .	No changes.	
Ellen Collins' Block, . . .	No changes.	
Tenement Block, No. 60 Lyman Street.	No changes.	
A. Ryan's Block, . . .	No changes.	
Charles Adams' Block, . .	Ladder to the first balcony.	Complied.
P. Hurlburt's Block, . . .	No changes.	
E. Roberts, 71 Centre Street, .	No changes.	
Tenement Block, No. 62 Centre Street.	No changes.	
Tenement Block, No. 64 Centre Street.	No changes.	
Tenement Block, No. 68 Centre Street.	No changes.	
Centre Street School Building, .	Brick tower stairway.	In process o erection.
Chestnut Street School, . .	Better ventilation.	Being im proved, no finished.

TOWN OF HOPEDALE.

Name of Building.	Orders given.	Compliances.
Grammar and Primary School-house.	Remove waste paper, etc., from basement.	Complied.
High School-house, . . .	Additional egress from second story.	Complied.

TOWN OF HOPKINTON.

High and Grammar School-house.	Better egress. Better ventilation. Better sanitary.	Complied in part.
No. 1 New School-house, . .	Better egress. Better ventilation. Better sanitary.	Complied in part.
Old School-house, . . .	Better egress. Better ventilation.	
School-house No. 1, . . .	Better egress. Better ventilation.	
School-house No. 2, . . .	Better ventilation. Better sanitary.	
School-house No. 3, . . .	Better ventilation. Better sanitary.	
School-house No. 4, . . .	Better ventilation. Better sanitary.	
School-house No. 5, . . .	Better ventilation. Better sanitary.	
School-house No. 7, . . .	Better ventilation. Better sanitary.	
School-house No. 8, . . .	Better ventilation. Better sanitary.	
School-house No. 9, . . .	Better ventilation. Better sanitary.	
School-house No. 10, . . .	Better ventilation. Better sanitary.	
School-house No. 11, . . .	Better egress. Better ventilation. Better sanitary.	Complied in part.
Gery's Building, ...	No orders given.	
Smith's Block, ...	Better egress. Combustible material removed. Steam pipes protected. Means of extinguishing fire.	Complied.
Park House, ...	Fire escape. Doors cut. Combustible material removed. Steam pipes protected. Means of extinguishing fire.	Complied.
Bridge's Block, ...	Portable fire escapes. Means of extinguishing fire.	Complied.
Town Hall, ...	Main doors swing out. Remove oil and lamps from under front stairs.	

TOWN OF HULL.

Name of Building.	Orders given.	Compliances.
Oregon House, ...	Additional egress and gong.	Complied.
St. Cloud Hotel, ...	Additional egress. Fire extinguishers.	Partly complied.
East End House, . . .	Additional egress. Fire extinguishers.	Partly complied.
Hotel Pemberton, . . .	Additional egress. Gongs.	Complied.
Sea Foam House, . . .	Additional egress. Gongs. Fire extinguishers.	Complied.
Ocean House, ...	Additional egress. Fire extinguishers.	Complied.
Standish House, ...	Additional egress. Fire extinguishers.	Partly complied.
Arlington House, . . .	Additional egress. Fire extinguishers.	Partly complied.
Montasco House, . . .	Additional egress. Fire extinguishers.	Partly complied.
Hotel, ...	Additional egress. Gongs. Fire extinguishers.	Partly complied.
Rockland Café, ...	Additional egress. Gongs. Fire extinguishers.	Partly complied.
Hampton House, . . .	Additional egress. Fire extinguishers.	Complied.
Rockland House, . . .	Additional egress. Gongs. Fire extinguishers.	Partly complied.
Atlantic House, ...	Additional egress. Gongs. Fire extinguishers.	Partly complied.
Pacific House, ...	Additional egress. Gongs. Fire extinguishers.	Partly complied.
Taylor's Tavern, . . .	Additional egress. Fire extinguishers.	Complied.
Reckard's Hotel, . . .	Additional egress. Fire extinguishers.	Partly complied.
Park House, ...	Additional egress. Fire extinguishers.	Partly complied.
Black Rock House, . . .	Additional egress. Fire extinguishers.	
Pilgrim House, ...	Additional egress. Fire extinguishers.	Partly complied.
Vine Café, ...	Additional egress. Fire extinguishers.	Partly complied.

TOWN OF HUNTINGTON.

Name of Building.	Orders given.	Compliances.
Highland Woollen Mill, . .	No changes.	
Chester Paper Co., . . .	No changes.	

TOWN OF HYDE PARK.

Readville Mills, ...	Additional egress.	Complied.
Leslie Building, ...	Reduce the weight on third floor.	Complied.
Greenwood School-house, . .	Improved egress. Fire extinguishers. Additional ventilation.	Partly complied.
High School-house, . . .	Additional egress. Additional ventilation.	Egress complied.
Fairmount School-house, . .	Improved egress. Additional ventilation. Fire extinguishers.	Partly complied.
Grew School-house, . . .	Additional egress. Additional ventilation. Fire extinguishers.	
Parochial School-house, . .	Additional egress. Additional ventilation. Fire extinguishers.	Partly complied.
Damon School-house, . .	Improved egress. Additional ventilation.	Partly complied.
Everett Hall, ...	Additional egress. Fire extinguishers.	Partly complied.
Neponset Block, . . .	Additional egress. Fire extinguishers.	

CITY OF LAWRENCE.

Forbes Block, ...	Fire escape. Portable extinguisher. Partition at head of stairs.	Complied.
Fairfield's Block, 429 to 435 Essex Street,	Fire escape. Portable means for extinguishing fire.	Complied.
Fairfield's Block, 413 to 419 Essex Street.	Fire escape. Portable means for extinguishing fire.	Complied.
Fairfield's Block, 421 to 427 Essex Street.	Fire escape. Portable means for extinguishing fire.	Complied.
Simmons Block, ...	Fire escape. Cut doors to connect with the same.	Complied.
Lawrence Opera House, . .	Portable means for extinguishing fire on stage.	Complied.
Essex House, ...	Portable means for extinguishing fire.	Complied.
Essex House, ...	Better sanitary; all pipes trapped and ventilated.	Complied.

CITY OF LAWRENCE — CONCLUDED.

NAME OF BUILDING.	Orders given.	Compliances.
Oliver School,	Better ventilation.	
High School,	Better ventilation.	
Stuart's Block,	Fire escape. Portable extinguishers.	Complied.
Sweney's Block,	Fire escape. Portable extinguishers.	
Post Office Block,	Fire escape. Portable extinguishers.	Complied.
Saunders Block,	Fire escape. Portable extinguishers.	
Packard School,	No order.	
Union School,	Keep privies in a cleanly state and ventilate them.	
Saunders School,	Keep privies in a cleanly state and ventilate them.	

TOWN OF AMESBURY.

High School,	Additional ventilation.	Complied.
School Street,	Additional ventilation.	Complied.
Whittier,	Additional ventilation.	Complied.
Agassiz,	Additional ventilation.	Complied.
Mann,	Additional ventilation.	Complied.
Garfield,	Additional ventilation.	
American House,	Watchman. Individual fire escapes. Portable means for extinguishing fire.	Complied.
Mascot House,	Individual fire escapes. Portable fire extinguisher.	Complied.
Babcock Carriage Company,	Portable means for extinguishing fire.	Complied.

TOWN OF LEE.

High School,	Better ventilation.	
Fern Cliff School,	Better ventilation.	Complied.
Centre School,	Better ventilation.	
Northrope Block,	Fire escape balcony extended to Masonic Hall. Doors to swing out. Fire pails.	Complied.

TOWN OF LENOX.

Name of Building.	Orders given.	Compliances.
High School, ...	Better ventilation.	Cancelled.
High School, ...	Better sanitary condition and ventilation.	

TOWN OF LEXINGTON.

Town Hall, ...	Additional ways of escape from fire.	Complied.
Hancock School, ...	For better ventilation.	
High School, ...	- -	
Adams School, ...	- -	

CITY OF LOWELL.

M. Jodoin, Tenement House, .	Fire escape and means for extinguishing fires.	Complied.
Pickering Knitting Co., . .	Fire escape and gates to open outwardly.	Complied.
Criterion Knitting Co., . .	Fire escape and doors to be kept unlocked.	Complied.
Talbot Building, ...	Folding ladder for fire escape from lower balcony to ground; means for extinguishing fires.	Complied.
Hill Brothers' Building, . .	Fire escape and means for extinguishing fires.	Partly complied.
Alva Wright's Buildings, . .	Fire escape; means for extinguishing fires.	Complied.
Elliot's Tenement Houses, . .	Fire escape; means for extinguishing fires.	Complied.
Green School, ...	- -	
Morrill School, ...	- -	
Bartlett School, ...	- -	
School Street School, . . .	- -	
Pawtucket School, . . .	- -	
Cheever Street School, . .	- -	
Rock Street School (Annex), .	- -	
Cabot Street School, . . .	- -	
River Street School, . . .	- -	
West Sixth Street School, . .	- -	

CITY OF LOWELL — CONTINUED.

NAME OF BUILDING.	Orders given.	Complian
Tenth Street School,	–	
Varnum School,	Better means for ventilation.	Complie
Butler School,	–	
Grand Street School,	–	
Franklin School,	Better means for ventilation.	
Dover Street School,	–	
Powell School,	–	
Plain Street School,	–	
Howard Street School,	–	
London Street School,	–	
Ward Street School,	–	
Carter Street School,	–	
Agawam School,	–	
Kirk Street School,	Better ventilation for closets.	
High School,	Better ventilation.	
Lyon Street School,	Better ventilation for closets.	
Central Street School,	–	
Chapel Street School,	–	
Cottage Street School,	–	
Ames Street School,	–	
Edson School,	Better means for ventilation.	
Colburn School,	–	
Fayette School,	–	
Training School,	–	
Rock Street School,	–	
Middlesex Village School,	–	
Pond Street School,	–	
High Street School,	–	
Moody School,	–	
Varnum Avenue School,	–	
Calef's Building,	Fire escape and means for extinguishing fires.	Partly co plied.
St. James Hotel,	Fire escape and means for extinguishing fires.	Partly co plied.

CITY OF LOWELL — Concluded.

Name of Building.	Orders given.	Compliances.
Murphy's Block,	Fire escape and means for extinguishing fires.	Complied.
Wason's Block,	Fire escape and means for extinguishing fires.	Partly complied.
Elliot School,	–	
Charles Street School,	–	
Training School (new),	–	

TOWN OF MALDEN.

Centre Grammar School,	For combustible substances to be removed from under stairways.	Complied.
West District School,	For better sanitary appliances and better ventilation.	
Maplewood School,	For better ventilation.	
High School,	For fire escape and better ventilation.	
Belmont School,		

TOWN OF MARION.

Sippican House,	Additional egress.	Complied.

TOWN OF MARLBOROUGH.

High School-house,	Additional egress. Fire stops. Means of extinguishing fire.	Complied.
Bigelow School-house,	Fire escape. Better ventilation. Means of extinguishing fire.	Complied in part.
Hildreth School-house,	Fire escape. Fire stops. Better ventilation. Means of extinguishing fire.	Complied in part.
Marlborough Theatre,	Asbestos curtain. Proscenium walls fire-proofed. Additional egress from fly floor. Guard steam pipes. Additional door to open out. Remove combustible material from under stage.	Complied in part.
Town Hall,	Means of extinguishing fire. Doors fourth floor to swing out.	Complied.
Central House,	Fire escapes. Doors cut. Guard steam pipes. Guards over lamps. Means of extinguishing fire.	Complied in part.

TOWN OF MARLBOROUGH — CONCLUDED.

NAME OF BUILDING.	Orders given.	Compliances.
St. Jean Baptiste Society Building.	Better egress. Means of extinguishing fire. Remove combustible material from under stairs.	Complied.
Carter's Block, ...	Fire escape. Fire stops. Doors cut. Means of extinguishing fire. Remove combustible material from under stairs and platform.	Complied in part.
City Hotel, ...	Fire escapes. Means of extinguishing fire.	
Rice & Hutchins' Factory, .	Fire escapes. Steam pipes protected.	Complied.
Commonwealth Shoe and Leather Co.	Fire escapes. Steam pipes protected.	Complied.

TOWN OF MARSHFIELD.

Webster House, ...	Additional egress and fire extinguisher.	Partly complied.
Fairview House, ...	Additional egress and fire extinguisher.	Partly complied.
Churchill House, . . .	Additional egress and fire extinguisher.	Partly complied.
Brant Rock House, . . .	Additional egress and fire extinguisher.	Partly complied.

TOWN OF MATTAPOISETT.

Mattapoisett House, . . .	Additional egress. Fire extinguisher.	Vacated.

TOWN OF MEDFORD.

Town Hall, ...	For better protection of ways of egress.	Complied.
Tufts School, ...	– –	
Tufts College, Library, . .	For fire escapes and means for extinguishing fires.	
Tufts College, West Hall, . .	For fire escapes and means for extinguishing fires.	
Tufts College, Dean Hall, . .	– –	
Tufts College, East Hall, . .	– –	
Tufts College, Gymnasium, .	– –	
Tufts College, College Hall, .	– –	
Tufts College, Goddard Chapel, .	– –	
Tufts College, Museum, . .	– –	

TOWN OF MELROSE.

Name of Building.	Orders given.	Compliances.
High School, ...	For better ventilation and better sanitary appliances.	
Grove Street School, . . .	For better ventilation and better provisions against fire.	

TOWN OF MERRIMACK.

Centre School, ...	Additional means of egress.	Complied.

TOWN OF METHUEN.

High School, ...	Portable means for extinguishing fire. Better sanitary. Additional ventilation.	Complied in part.
Primary School, ...	Additional ventilation.	
Arlington School, . . .	Additional ventilation. Keep privies in cleanly state.	Complied in part.

TOWN OF MILFORD.

High School, ...	Better ventilation. Better egress. Better sanitary.	Complied in part.
Park Grammar School, . .	Better ventilation. Better egress. Better sanitary. Remove combustible material.	Complied in part.
Town House School, . . .	Better ventilation. Better egress. Better sanitary. Remove combustible material.	Complied in part.
North Grammar School, . .	Better ventilation. Better egress. Better sanitary.	Complied in part.
South Grammar School, . .	Better ventilation. Better egress. Better sanitary. Fire stops under stairs.	Complied in part.
Chapin Street School, . . .	Better ventilation. Better sanitary.	Complied in part.
Hoboken School, . . .	Better ventilation.	Complied in part.
Bear Hill School, . . .	Better ventilation.	Complied in part.
Braggville School, . . .	Better ventilation and sanitary.	Complied in part.
Deer Brook School, . . .	Better ventilation.	Complied in part.
Fountain Street School, . .	Better ventilation and sanitary.	

TOWN OF MILFORD — Concluded.

Name of Building.	Orders given.	Compliances.
Claflin School, ...	Better ventilation. Better egress.	Complied in part.
Memorial Hall, ...	Means of extinguishing fire.	Complied.
Gillon's Block, ...	Fire escape. Means of extinguishing fire.	Complied.
Hotel Willian, ...	Portable fire escapes. Doors cut. Means of extinguishing fire.	Complied.
Goucher's Hotel, . . .	Fire escape. Means of extinguishing fire.	Complied.
Alhambra Block, . . .	Better egress. Means of extinguishing fire. Combustible material removed from under stairs.	Complied.
Music Hall Block, . . .	Steam pipes protected.	
Washington Block, . . .	Additional egress from gallery. Doors open out. Means of extinguishing fire. Rear entry kept free of obstructions.	Complied in part.
Irving Block, ...	Doors open out Means of extinguishing fire.	Complied.
Lincoln House, ...	Fire escapes. Doors put in. Means of extinguishing fire. Steam pipes protected.	

TOWN OF MILTON.

Mattapan School-house, . .	Improve egress. Additional ventilation.	
Central School-house, . .	Additional egress. Additional ventilation.	
High School-house, . . .	No order issued.	
East School-house, . . .	Additional egress. Additional ventilation.	
Pleasant Street School house, .	Additional egress. Additional ventilation.	
South School-house, . . .	Additional ventilation.	
West School-house, . . .	Additional egress. Additional ventilation.	

TOWN OF MONSON.

D. W. Ellis & Son, . . .	Fire escape.	Complied.
R. M. & T. Reynolds, Old Mill,	No changes.	
R. M. & T. Reynolds, New Mill,	No changes.	

TOWN OF MONSON — CONCLUDED.

NAME OF BUILDING.	Orders given.	Compliances.
S. F. Cushman's Home Mill, .	No changes.	
S. F. Cushman's Branch Mill, .	No changes.	
Central Hall, ...	Two outside stairways.	Closed indefinitely.

TOWN OF MONTAGUE.

Central Street School, . .	No order.	
Eighth Street School, . . .	Better ventilation.	Transfer'd to new building and complied.
Oakman School, ...	No order.	
L. Street School, ...	No order.	To be abandoned.
South End School, . . .	No order.	
Montague City School, . .	To swing doors out. Better ventilation.	Complied in part.
Montague Centre School, . .	No order.	
A. O. H. Society Block, . .	Hang doors between stairway corridors.	Complied.
Pawtucket Hall, ...	No order.	

TOWN OF NATICK.

Washington Hall Block, . .	Additional egress. Means of extinguishing fire. Asbestos curtain. Combustible material removed.	Complied in part.
Walcott's Building, . . .	Fire escape. Additional egress from banquet room. Means of extinguishing fire.	Complied.
Centre School-house. . . .	Better ventilation. Means of extinguishing fire. Remove combustible material under stairs.	
High School-house, . . .	Better ventilation. Means of extinguishing fire. Fire stops. Remove combustible material.	

TOWN OF NEWBURY.

Plum Island Hotel, . . .	Portable means of extinguishing fire.	Complied.
Plum Island Pavilion, . .	No order.	

CITY OF NEWBURYPORT.

Name of Building.	Orders given.	Compliances.
Brown Square Hotel, . . .	Fire escape front and rear. Improve the sanitary.	Complied.
Kelley School, ...	Additional ventilation.	Complied in part.
Davenport School, . . .	No order.	
Putnam School, ...	Better sanitary arrangements. Improve the ventilation.	Complied in part.
Temple Street School, . .	No order.	
Jackman School, . . .	Remove privies. Additional ventilation.	
Bromfield School, . . .	No order.	
Johnson School, ...	Better sanitary arrangements. Improve ventilation.	Complied in part.
Forrester School, . . .	No order.	
Ashland School, ...	No order.	
Parochial School, . . .	Additional and better sanitary arrangement.	
Charles Street Parochial School,	Additional ventilation. Better sanitary arrangements.	
Monroe Street Parochial School,	Additional ventilation. Better sanitary arrangements.	
City Hall, ...	Asbestos curtain. Improve the ventilation and sanitary.	
Adams & Pettengill Shoe Factory,	Fire escape and fire pails.	Complied.
Ross Block, ...	No order.	
Atkinson Block, ...	Fire escape.	Complied.
Newburyport Shoe Co. Factory,	Portable means for extinguishing fire.	Complied.
Newburyport Electric Light Building.	Fire escape. Fire pails.	

CITY OF NEWTON.

Hotel Hunnewell, . . .	Fire escape.	Complied.
Robinson's Block, . . .	Additional means of egress.	Complied.
Central Block, ...	Additional means of egress.	Complied.
Nickerson Block, . . .	Fire escape.	Complied.
Eliot Hall, ...	Additional means of egress.	Complied.
Jackson School-house, . .	To provide means for ventilation.	Complied.
Franklin School-house, . .	To provide means for ventilation.	Complied.

CITY OF NEWTON — CONCLUDED.

NAME OF BUILDING.	Orders given.	Compliances.
Davis School-house,	To provide means for ventilation.	Complied.
Hamilton School-house,	To provide means for ventilation.	Complied.
Prospect School-house,	To provide means for ventilation.	Complied.
Prospect Primary School-house,	To provide means for ventilation.	Complied.
Mason School-house,	To provide means for ventilation.	Complied.

TOWN OF NORFOLK.

Centre School-house,	Improve egress. Additional ventilation.	

TOWN OF NORTH ADAMS.

Jones Block,	No order.	
Tower & Porter Block,	No order.	
Reardon Block,	No order.	
Drury Academy,	Better sanitary conditions and ventilation.	Complied.
Union Street School,	Better sanitary conditions and ventilation.	Transfer'd to Church St. School and complied.
Veasie Street School,	Remove rubbish under stairs.	Complied.
	Better ventilation.	Transfer'd to Greylock School and complied.

CITY OF NORTHAMPTON.

Nonotuck Silk Co., Leeds,	No changes ordered.	
Nonotuck Silk Co., Florence,	–	–
Hospital Hill School Building,	Better sanitary provisions.	Complied.
	Better ventilation.	Improved.
Loudville School Building,	Better sanitary provisions.	Complied.
	Better ventilation.	Improved.
South Street School Building,	Better sanitary provisions.	Complied.
	Better ventilation.	Improved.
Bridge Street School,	Better sanitary provisions.	Complied.
	Better ventilation.	Improved.
William Street School Building,	Better sanitary provisions.	Complied.
	Better ventilation.	Improved.

CITY OF NORTHAMPTON — CONCLUDED.

NAME OF BUILDING.	Orders given.	Compliances.
Leeds Primary School,	Better sanitary provisions. Better ventilation.	Complied. Improved.
King Street School, South,	Better sanitary provisions. Better ventilation.	Complied. Improved.
Florence High School,	Better sanitary provisions. Better ventilation.	Complied. Improved.
Leeds Grammar School,	Better sanitary provisions. Better ventilation.	Complied. Improved.
Bay State School,	Better sanitary provisions. Better ventilation.	Complied. Improved.
Prospect School,	Better sanitary provisions. Better ventilation.	Complied. Improved.
King Street School, North,	Better sanitary provisions. Better ventilation.	Complied. Improved.
Stone Hill School,	Better sanitary provisions. Better ventilation.	Complied. Improved.
Elm Street School,	Better sanitary provisions. Better ventilation.	Complied. Improved.
Paper Mill School,	Better sanitary provisions. Better ventilation.	Complied. Improved.
Pine Street School,	Better sanitary provisions. Better ventilation.	Complied. Improved.
Centre Street School,	Better sanitary provisions. Better ventilation.	Complied. Improved.

TOWN OF NORTH ANDOVER.

Merrimack School,	Better sanitary arrangements. Additional ventilation.	Complied in part.
Bradstreet School,	No order.	
Centre Primary,	Additional ventilation.	

TOWN OF NORTHFIELD.

Recitation Hall, Northfield Seminary.	No order.	
Marquand Hall, Northfield Seminary.	No order.	
East Hall, Northfield Seminary,	No order.	
Weston Hall, Northfield Seminary.	No order.	
The Northfield,	No order.	

TOWN OF NORWOOD.

Name of Building.	Orders given.	Compliances.
N. Y. & N. E. Car Shops, . .	No order given.	
Everett School, ...	Improve egress. Protect pipes. Additional ventilation. Improve sanitaries.	
Village Hall Building, . .	Fire extinguisher. Additional egress.	

TOWN OF ORANGE.

North School, ...	Better ventilation.	
Lamb Block, ...	Additional egress.	Complied.
East School, ...	Better ventilation.	
High School, ...	Better ventilation.	
Myrtle Street School, . . .	Better ventilation.	
Masonic Hall, ...	Additional egress.	Complied.
Wait Block, ...	To swing doors out. Hang doors in corridor.	Complied in part.
Putnam Opera House, . .	Fire pails on stage and in anterooms.	Complied.

TOWN OF PALMER.

Thorndike Mills, Otis Co., No. 1,	No changes.
Thorndike Mills, Otis Co., No. 2,	No changes.
Palmer Mill, Otis Co., . .	No changes.

TOWN OF PITTSFIELD.

Howe & Reed Building, . .	Additional egress. Means for extinguishing fire.	Complied.
Wollison Block, ...	Two fire escapes.	Complied.
Berkshire Life Insurance Co.'s Building.	Fire escape. Hang doors between corridors.	Complied.
West Block, ...	Additional egress. Means for extinguishing fire.	Complied.
Allen Block, ...	No order.	
Ethel Hall Building, . . .	Additional egress. Fire pails.	Complied.
High School, ...	Better ventilation.	

TOWN OF PITTSFIELD — Concluded.

Name of Building.	Orders given.	Compliances.
Centre School, ...	Better ventilation.	Improved.
Penn Street School, . . .	Better ventilation.	
Orchard Street Grammar School,	Better sanitary condition and ventilation.	Improved.
Orchard Street Primary School,	Better sanitary condition and ventilation.	Improved.
England Building, . . .	Fire escape. Hang doors between corridors.	In process.

TOWN OF PLYMOUTH.

Manomet House, . . .	Additional egress. Fire extinguisher.	Complied.
Brastow House, ...	No order given.	
Franklin House, ...	Additional egress.	Partly complied.
Samoset House, ...	Improved egress. Gong.	Partly complied.

CITY OF QUINCY.

Drake's Shop, ...	No order given.	
Whicher's Shop, ...	Additional egress. Protect oil room. Fire extinguisher.	Complied.
Colosseum, ...	Improved egress.	
Temperance Hall, . . .	Additional egress. Fire extinguisher.	Complied.
Hancock Hall, ...	Improved egress.	Complied.
St. Mary's Temperance Hall, .	Improved egress.	Complied.
Adams Acc. Boarding-house, .	Additional egress. Fire extinguisher.	Vacated.

TOWN OF RANDOLPH.

Porter's Block, ...	Additional egress. Fire extinguisher.	
Harmony Hall, ...	Improved egress.	

TOWN OF REVERE.

Name of Building.	Orders given.	Compliances.
Beachmont School, . . .	To improve the ventilation.	Not complied.
Crescent Beach School, . .	To improve the ventilation.	Not complied.
Franklin Avenue School, . .	To improve the ventilation.	Not now used.
Malden Street School, . .	To improve the ventilation.	Not complied.
North School, ...	To improve the ventilation.	Not complied.
Shurtleff School, ...	To improve the ventilation.	Not complied.
Winthrop Avenue School, . .	To improve the ventilation.	Not complied.
Hotel Pines, ...	Two watchmen and portable fire escapes.	Complied.
Sea Foam House, . . .	Portable fire escapes.	Complied.
Revere House, ...	Portable fire escapes.	Complied.
The Strathmore, ...	Watchman. Red lights at stairways, and notice of ways of egress posted in sleeping rooms.	Complied.
Columbus House, . . .	Balcony at north side.	Complied.
Hotel Gleason, ...	Portable fire escape.	Complied.
The Crescent, ...	Fire escape.	

TOWN OF ROCKPORT.

Linwood House, ...	Individual fire escapes. Fire pails.	Complied.
Ocean View House, . . .	Individual fire escapes. Fire pails.	Complied.
Pigeon Cove House, . . .	No order.	
Sandy Bay House, . . .	Individual fire escapes. Fire pails.	Complied.

TOWN OF ROWLEY.

Centre School, ...	Improve the ventilation.	
East End School, . . .	No order.	

TOWN OF RUSSELL.

Crescent Paper Co., . . .	No changes.	

TOWN OF SALISBURY.

Name of Building.	Orders given.	Compliances.
Ocean View House, . . .	Portable fire extinguishers.	Complied.
Sea Side House, ...	Portable fire extinguishers.	Complied.
Pavilion, ...	No order.	
Cable House, ...	No order.	
Brunswick House, . . .	Portable escapes. Fire pails.	Complied.
Harriman House, . . .	Individual fire escapes and fire pails.	Complied.

TOWN OF SCITUATE.

Humarock House, . . .	Additional egress. Gong.	Partly complied.

TOWN OF SHARON.

Massapoag Lake House, . .	Additional egress. Gongs.	Partly complied.

TOWN OF SHEFFIELD.

No. 6 and 13 Schools, . . .	No order.	
High School, ...	No order.	
New School, ...	No order.	
Ashley Falls School, . . .	No order.	
Town Hall, ...	Additional egress. Hang doors to swing out.	Complied.

TOWN OF SHELBURNE.

Village School, ...	Better ventilation.	Complied.
Centre School, ...	Better ventilation.	Improved.
Arms Academy, ...	Better ventilation.	Improved.

CITY OF SOMERVILLE.

Clarendon Hall, ...	For outside stairway.	Complied.
The Fairfield, ...	-	-
Lincoln School, ...	-	-

CITY OF SOMERVILLE — CONCLUDED.

NAME OF BUILDING.	Orders given.	Compliances.
Franklin School,	Better means for ventilation.	
Beach Street School,	– –	
Prescott School,	Better means for ventilation.	Complied.
Morse Grammar School,	Change in ways of egress, and better ventilation.	In process of compliance.
Davis School,	– –	
The Woodbridge,	– –	
Bacon Hall,	Means for extinguishing fires, and change in doors.	Complied.
Eberle Hall,	Means for extinguishing fires.	Complied.
Fraternal Hall,	Protection for stairways from fire, and means for extinguishing fires.	Complied.
Y. M. C. A. Hall,	– –	
Arcanum Hall,	One fire escape and means for extinguishing fires.	
The Avon,	– –	
The Irving,	– –	

CITY OF SPRINGFIELD.

Dickinson's Block,	Balconies and outside stairways.	Complied.
Patton's Block,	Outside stairways. Cut doors.	Complied.
Hampden Block,	Outside stairways.	Complied.
Clark's Block,	Outside stairways and balconies.	Complied.
School for Christian Workers,	Outside stairway.	Complied.
Seymour's Block,	Outside stairway.	Complied.
North Church Block,	Outside stairway and extinguishers.	Complied.
P. P. Kellogg's Block,	Two outside stairways.	Complied.
Haynes Block,	Fire escape in rear. Cut doors.	Complied.
Bill's Block,	Fire escape. Cut doors. Bridge.	Complied.
Fallon's Block,	– –	Complied.
Barnes Block,	Fire escape. Cut doors and balconies.	Complied.
Shaw's Block,	Fire escape. Cut doors.	Complied.
Wilson's Block,	Fire escape. Cut doors.	Complied.
Tapley's Buildings,	Balconies.	Complied.
Meekins' Block,	Two fire escapes.	Complied.

CITY OF SPRINGFIELD — CONCLUDED.

NAME OF BUILDING.	Orders given.	Compliances.
Sibley's Block, ...	Fire escape.	Complied.
Smith's Block, ...	Fire escape.	Complied.
Wilcox Estate, ...	Fire escape.	Complied.
Springfield Institution for Savings,	Fire escape.	Complied.
Brewer's Estate, ...	Fire escape.	Complied.
First National Bank Block, .	Fire escape in rear.	Complied.
Five Cent Savings Bank Block, .	Fire escape in rear. Cut doors.	Not finished.
D. W. Bemis' Block, . . .	Fire escape in rear and in front.	Complied.
Fred. B. Taylor's Block, . .	Fire escape and balconies in front.	Complied.
Indian Orchard School, . .	Brick tower stairway.	Complied.
F. Fuller's Block, . . .	Four outside stairways.	Complied.

TOWN OF STOCKBRIDGE.

High School, ...	Better ventilation.	*–
Glendale School, ...	Better sanitary condition (order from High School).	Complied.

TOWN OF SOUTH HADLEY FALLS.

Joseph N. Prew, ...	Fire escape on the southerly side.	

TOWN OF STONEHAM.

High School, ...	For better ways of egress in case of fire.	
Centre Primary School, . .	– –	
North School, ...	– –	

TOWN OF STOUGHTON.

Clapp School-house, . . .	Additional egress. Additional ventilation. Improve sanitaries.	†–
Drake School-house, . . .	Improve egress. Additional ventilation.	Egress complied.
Park School-house, . . .	Improve egress. Additional ventilation.	Complied.
Adams School-house, . . .	Additional egress. Additional ventilation.	Egress complied.

* Transferred to Glendale School, and complied.

† Egress and sanitary complied.

TOWN OF STOUGHTON — CONCLUDED.

NAME OF BUILDING.	Orders given.	Compliances.
Smith School-house,	No order given.	
Dennis School-house,	Improve egress. Improve sanitaries. Additional ventilation.	*
Tolman School-house,	Improve egress. Improve sanitaries. Additional ventilation.	*
Capen School-house,	Improve egress. Additional ventilation.	*Egress Complied.
Town House,	Additional egress. Fire extinguishers.	

TOWN OF SUNDERLAND.

Town Hall and Schools,	To hang doors to swing out.	In process.

TOWN OF TYNGSBOROUGH.

Winslow School,	-	-
Primary School No. 9,	Front door to open outwardly.	
Primary School No. 5,	-	-

TOWN OF WAKEFIELD.

High School,	Aditional egress and better ventilation.	
Centre Grammar School,	For better ventilation.	
Centre Primary School,	For better ventilation.	
Franklin School,	For better ventilation.	
Hamilton School,	-	-

TOWN OF WALES.

Hegan Woollen Mill,	No changes.	
Dell Woollen Mill,	No changes.	
Shaw Woollen Mill,	No changes.	
Centre School Building,	Better sanitary provision. Better ventilation.	Sanitary complied.

* Egress and sanitary complied.

CITY OF WALTHAM.

Name of Building.	Orders given.	Compliances.
Grove Street School,	–	–
High School,	For better sanitary provisions and ventilation.	
Endicott Hall,	–	–
Fraternity Hall,	–	–
A. O. U. W. Hall,	For additional means of egress and means for extinguishing fires.	Complied.
North Grammar School,	Better means for ventilation.	
West School,	For better ventilation.	
Odd Fellows Hall,	For fire escape and means for extinguishing fires.	

TOWN OF WAREHAM.

Washburn House,	Additional egress.	Complied.
Hotel Onset,	Additional egress. Gong.	Partly complied.
Glen Cove House,	Additional egress. Fire extinguisher.	Partly complied.

TOWN OF WATERTOWN.

Dana Block,	Fire escape from hall.	Use of hall discontin'd.
Phillips School-house,	To provide means for ventilation.	Complied.
Coolidge School-house,	To provide means for ventilation.	Complied.
Francis School-house,	To provide means for ventilation.	Complied.
Parker School-house,	To provide means for ventilation.	Complied.
Spring School-house,	To provide means for ventilation.	Complied.

TOWN OF WAYLAND.

Cochituate School,	For better ventilation.	
W. & J. M. Bent,	–	–

TOWN OF WELLESLEY.

Name of Building.	Orders given.	Compliances.
Shaw School House, . . .	No orders given.	
Hunnewell School, . . .	Better ventilation. Fire stops. Remove combustible material.	Complied. in part.
Shattuck's Block, . . .	Better egress. Fire stops. Means of extinguishing fire. Remove combustible material in basement.	Complied in part.
Wellesley College, Main Building,	Fire escapes. Smoke and fire stops. Gongs. Notices in rooms. Watchmen. Remove combustible material. Protect steam pipes. Red lights.	Complied in part.
Wellesley College, Nurembega Cottage, ...	Fire escapes. Gongs. Steam pipes protected. Remove oil.	Complied in part.
Wellesley College, Freeman Cottage, ...	Fire escapes. Gongs. Fire proof over boiler.	Complied in part.
Wellesley College, Simpson Cottage, ...	No order given.	
Wellesley College, Stone Hall, .	Fire escapes. Watchmen. Red lights. Notices in rooms. Doors cut. Gongs. Steam pipes protected. Window gratings changed.	Complied in part.
Wellesley College, The Eliot, .	No orders given.	

TOWN OF WESTFIELD.

Post Office Block, . . .	Fire escape on south side.	Complied.
Ives's Block, ...	Outside stairway.	
Gem Opera House, . . .	Fire-resisting curtain and partition.	Complied.
Music Hall, ...	Fire-resisting curtain and partition.	Complied.
Silver Street School Building, .	Sanitary provisions. Better ventilation.	Sanitary complied.

TOWN OF WEST STOCKBRIDGE.

Town Hall, ...	Doors to swing out.	Complied.
Village School, ...	No order.	

TOWN OF WEYMOUTH.

Name of Building.	Orders given.	Compliances.
New School-house, . . .	Improve egress. Additional ventilation.	Egress complied.

TOWN OF WHITMAN.

New School-house, . . .	Improve egress. Additional ventilation.	Egress complied.

TOWN OF WILLIAMSBURG.

Nonotuck Silk Co., . . .	No changes ordered.	
Haydenville Manufacturing Co.,	No changes ordered.	
Henry L. James, . . .	No changes ordered.	

TOWN OF WILLIAMSTOWN.

High School, ...	Better sanitary conditions and ventilation. Enclosed stairway on rear.	Complied.
Station School, ...	Better ventilation.	Complied.
Morgan Hall, ...	No order.	
South College, ...	No order.	
East College, ...	Additional egress.	Complied.
Kellogg Hall, ...	Portable fire escapes.	Complied.
West College, ...	No order.	
The Greylock, ...	Notices in sleeping rooms. Fire pails.	Complied.
Taconic Inn, ...	Notices in sleeping rooms.	Complied.

TOWN OF WINCHESTER.

Wyman School, ...	For better sanitary appliances.	Complied.

TOWN OF WINTHROP.

Almont Street School, . .	To improve the ventilation.	Complied.
Pauline Street School, . .	To improve the ventilation.	Complied.
Reed's Block, ...	Additional means of egress.	Complied.

TOWN OF WINTHROP — CONCLUDED.

NAME OF BUILDING.	Orders given.	Compliances.
Winthrop Beach House, . .	Portable fire escapes and means for extinguishing fires.	Partly complied.
Young's Hotel, ...	Means for extinguishing fires.	Complied.

CITY OF WOBURN.

Music Hall, ...	For fire escape.	Complied.
Odd Fellows Hall, . . .	For fire escape and means for extinguishing fires.	Complied.
Concert Hall, ...	For fire escape.	Complied.
Grand Army Hall, . . .	Change in fire escape and means for extinguishing fires.	Complied.
Cummings School, . . .	–	–
Lawrence School, . . .	–	–
Lyceum Hall, ...	For two fire escapes and means for extinguishing fires.	

CONSOLIDATED REPORT. — Sanitary Condition of Schoolhouses.

Joseph M. Dyson, *Inspector.*

Location.	Name of Building.	Materials.	Number of Class Rooms	Average No. of pupils in each room.	Means of Heating.	Sanitary Appliances.
Athol,	Lower Village Primary.	Wood,	4	57	Furnace and stove and steam.	Surface vault—poor.
"	High School,	"	4	53	Steam,	" "
"	Upper Village Intermediate.	"	2	52	Stoves,	" "
"	Upper Village Primary.	"	2	62	"	" "
"	Hapgood Road Primary.	"	2	49	Smead,	Smead.
Blackstone,	High School,	"	2	63	Stoves,	Surface vault—poor.
"	Waterford Grammar,	"	5	60	"	" "
Brookfield,	High School,	"	4	50	"	" "
"	Centre School,	"	4	44	Furnace and stove,	" "
Clinton,	Walnut St., No. 4,	Brick,	2	55	By furnace,	Surface vault.
"	Franklin St., No. 8,	"	3	56	Stoves,	Surface vault—poor.
"	Pleasant St., No. 6,	"	4	62	Furnace,	Surface vault.
"	Cameron St., No. 1,	"	2	64	"	Surface vault—poor.
"	Vernon St., No. 9,	"	2	64	Stoves,	" "
"	Old High St., No. 10,	"	3	65	Furnace,	Surface vault.
Douglas,	E. Douglas High,	Wood,	3	53	Stoves,	" "
Fitchburg,	High St Grammar,	Brick,	10	57	— —	" "
"	Day St. School,	"	11	54	— —	" "
"	West Fitchburg Gram.	"	3	52	Furnace,	" "
Gardner,	High School,	"	3	77	Direct steam,	Closets.
"	Centre School,	Wood,	4	64	" "	Surface vault.
"	West St Primary,	Brick,	4	57	" "	Closets — poor.
"	New Brick High Primary.	"	4	60	Stoves,	Surface vault—poor.
Grafton,	High School,	Wood,	2	57	Furnace,	" "
"	North St Grammar,	Brick,	4	56	Stoves,	" "
"	North Grafton Gram.	Wood,	4	26	"	" "
Holden,	Dist. No. 1 Primary,	Brick,	2	50	"	Surface vault.
"	Damon Building,	Stone,	2	32	Direct and indirect steam.	Closets.
"	Jeffersonville Gram.,	Wood,	4	50	Stoves,	Surface vault.
"	Quinapoxet, No 12,	"	2	46	"	" "
"	Unionville, No 2,	Brick,	1	30	"	" "
Leicester,	Centre St. School,	"	3	47	"	" "
"	Cherry Valley Gram.,	Wood,	4	52	"	" "
Lancaster,	Town Hall and High,	Brick,	2	58	Steam,	Closets.

CONSOLIDATED REPORT — Sanitary Condition of Schoolhouses.

Joseph M. Dyson, *Inspector.*

Ventilation.	Remarks.
Poor,	Ordered, improved ventilation and sanitary. Replaced by new building.
None,	Ordered, improved ventilation and sanitary. Sanitary order complied with.
"	Ordered, improved ventilation and sanitary. Sanitary order complied with.
Poor,	Ordered, improved ventilation and sanitary. Sanitary order complied with.
Smead jacketed stove,	Fair ventilation.
Poor,	Ordered, improved ventilation and sanitary. Not complied with.
"	Improved ventilation and sanitary. Not complied with.
Shaft,	" " " " "
Robinson ventilation,	" " " " "
Poor,	Improved ventilation.
"	Improved ventilation and sanitary. Sanitary order complied with.
Shaft,	Improved ventilation.
"	Improved sanitary. Sanitary order complied with.
"	Improved sanitary and ventilation. Sanitary order complied with.
"	Improved ventilation. Not complied with.
Poor,	" " " "
"	Improved ventilation and sanitary.
Shaft,	Improved ventilation.
"	" "
Poor,	Improved ventilation and sanitary. Not complied with.
None,	" " " " "
Small unheated shaft,	" " " " "
Shaft,	" " " " "
None,	Improved ventilation. Not complied with.
Shaft,	" " " "
Poor,	Improved ventilation and sanitary. Not complied with.
Shaft,	Improved ventilation. Not complied with.
Good,	- -
Shaft,	Improved ventilation. Not complied with.
None,	" " " "
"	" " " "
Shaft,	Improved ventilation. Complied with.
Poor,	Improved ventilation and sanitary. Sanitary order complied with.
Shaft,	- -

Consolidated Report. — Sanitary Condition of Schoolhouses — Continu

Location.	Name of Building.	Materials.	Number of Class Rooms	Average No. of pupils in each room.	Means of Heating.	Sanitary Applia
Lancaster, .	Centre Grammar, .	Brick,	2	50	Direct steam and stove	Surface vault.
Millbury, .	Union Grammar, .	"	4	64	Stoves, . . .	" "
" .	Bramanville Gram., .	Wood,	4	49	" . . .	" "
Northbridge, .	Clark Building, . .	"	4	56	Furnace, . .	" "
No. Brookfield,	High School, . .	Brick,	7	57	Direct steam, .	" "
Petersham, .	Nichewaug House, .	Wood,	41	–	Stoves, . . .	–
Princeton, .	Mountain House, .	–	71	–	– –	–
" .	Wachusett House, .	Wood,	70	–	– –	–
" .	Prospect House, .	–	49	–	– –	–
Spencer, . .	Main St. Brick, . .	Brick,	6	55	Direct steam, .	Surface vault.
" . .	Early St. School, .	"	4	68	Smead, . . .	Smead closets.
" . .	Maple St. School, .	"	4	63	Direct steam, .	Closets.
" . .	" " Annex, .	"	4	63	" " .	Surface vault.
" .	Pleasant St. School, .	"	4	57	Direct steam and indirect.	Closets.
" . .	Grove St School, .	"	4	69	Furnace and stove,	Surface vault,
Sutton, . .	High School, . .	–	2	38	Stoves, . . .	" "
" . .	Manchaug Intermediate	Wood,	3	55	" . . .	" "
Uxbridge, .	High School, . .	W'd & Brick.	6	47	Direct steam, .	" "
Warren, . .	West Warren Gram.,	Brick,	4	46	" " .	" "
" . .	West Warren Primary, No. 8.	Wood,	2	59	Furnace, . .	" "
" . .	South St. Primary, .	"	2	48	" . .	" "
" . .	Maple St. School, .	"	2	46	" . .	" "
" . .	East St. Primary, .	"	3	43	Furnace and stove,	" "
" . .	High School, . .	Brick,	6	47	Direct steam, .	Closets.
Webster, . .	Music Hall, . .	Wood,	–	–	Stoves, . . .	– –
Westborough, .	High School, . .	Brick,	2	77	Furnace, . .	Surface vault.
" .	Grove St. School, .	"	3	34	Direct steam, .	– –
" .	Grove St 1st Primary.	"	2	50	" " .	Surface vault.
" .	Sub Gram. School, .	"	2	55	Stoves, . . .	Closets.
" .	High St. House, .	"	2	50	" . . .	Surface vault.
" .	Phillips St. School, .	"	4	47	– –	" "
West Boylston,	Primary No. 2, . .	Wood,	2	52	Stoves, . . .	" "
" "	" No. 8, . .	"	2	52	" . . .	" "
" "	" No. 7, . .	"	1	56	– –	Bad.
" "	High School, . .	"	2	65	Stoves, . . .	Surface vault.
" "	Primary No. 6, . .	–	2	28	" . . .	" "
" "	" No. 3, . .	Wood,	1	64	Steam, . . .	" "

Consolidated Report. — Sanitary Condition of Schoolhouses — Continued.

Ventilation.	Remarks.
Unheated shaft,	– –
Shaft,	Improved ventilation and sanitary. Not complied with.
Poor,	" " " " "
Shaft,	– –
None,	Improved ventilation. Complied with.
– –	Fire escapes.
– –	Watchman, red lights, gongs, and fire escapes. Complied with.
– –	Watchman, red lights, gongs, and fire escapes. Complied with.
– –	Red lights, gongs, and fire escapes. Complied with.
None,	Improved ventilation and sanitary. Sanitary order complied with.
Smead,	– –
Shaft,	Improved ventilation and sanitary. Sanitary order complied with.
None,	Improved ventilation and sanitary. Sanitary order complied with.
Unheated shaft,	Improved ventilation and sanitary. Sanitary order complied with.
None,	Improved ventilation and sanitary. Sanitary order complied with.
Shaft,	Improved ventilation and sanitary. Sanitary order complied with.
Poor,	Improved ventilation and sanitary. Sanitary order complied with.
Shaft,	Improved ventilation and sanitary. Sanitary order complied with.
"	– –
Poor,	Improved ventilation. Complied with.
Shaft,	– –
"	Improved ventilation and sanitary. Sanitary order complied with.
Poor,	Improved ventilation and sanitary. Sanitary order complied with.
Shaft,	– –
– –	– –
None,	Improved ventilation and sanitary. Sanitary order complied with.
"	Improved ventilation and sanitary. Sanitary order complied with.
"	Improved ventilation and sanitary. Sanitary order complied with.
Unheated shaft — poor,	Improved ventilation and sanitary. Sanitary order complied with.
" " "	Improved ventilation and sanitary. Sanitary order complied with.
Fair,	Improved ventilation and sanitary. Sanitary order complied with.
None,	Improved ventilation and sanitary. Sanitary order complied with.
Poor,	Improved ventilation and sanitary. Sanitary order complied with.
"	Improved ventilation and sanitary. Replaced by new building.
"	Improved ventilation.
"	Improved ventilation and sanitary. Sanitary order complied with.
"	Sanitary order complied with.

Consolidated Report. — Sanitary Condition of Schoolhouses — Continued.

Location.	Name of Building.	Materials.	Number of Class Rooms.	Average No. of pupils in each room.	Means of Heating.	Sanitary Appliances.
W. Brookfield,	School St. Building,	Wood,	4	55	Stoves,	Surface vault.
" "	Sub. Primary,	"	2	47	Furnace,	" "
Worcester,	High School,	Brick,	18	38	Direct and indirect steam.	Closets.
"	Walnut St. School,	"	10	30	Direct steam,	"
"	Thomas St. School,	"	12	50	Furnace,	"
"	Ash St. School,	"	6	50	Stoves,	Surface vault.
"	Washington St. Sch'l,	"	2	57	"	- -
"	Salem St. School,	"	4	-	"	Closets.
"	Sycamore St. School,	"	8	50	"	"
"	Freeland St. School,	"	-	-	Direct and indirect steam.	"
"	New Worcester Sch'l,	"	4	-	- -	Surface vault.
"	Old Woodland St. School.	"	12	-	Furnace and stoves,	Closets.
"	New Woodland St. School.	"	4	-	Furnace,	"
"	Chandler St. School,	"	10	-	Direct steam,	"
"	Millbury St. New School.	-	-	-	Direct and indirect steam.	"
"	Cambridge St. Sch'l,	-	9	51	- -	Surface vault.
"	Lamartine St. School,	Brick,	12	56	- -	Closets.
"	Quinsig. House,	-	2	50	Stoves,	Surface vault.
"	Millbury St. Old School.	-	8	50	Furnace,	" "
"	Providence St. Sch'l,	-	8	50	Stoves,	" "
"	Grafton St. School,	-	4	-	Furnace,	Closets.
"	" Old Sch'l,	-	2	-	- -	Surface vault.
"	Ledge St. New Sch'l,	-	6	-	Smead system,	Smead.
"	" Old Sch'l,	-	9	50	" "	"
"	Belmont St. School,	-	18	48	Direct steam,	Water closets.
"	Summer St. Old Sch'l,	-	5	50	Stoves,	Surface vaults.
"	Gage St. School,	-	10	52	Steam,	Water closets.
"	East Worcester Sch'l,	-	3	50	Stoves,	" "
"	New Waverly House,	Brick,	-	-	- -	- -
"	Worcester Academy,	"	-	-	- -	- -

City of Lynn (*High and Grammar*).

Sam'l C. Hunt, *Inspector, etc., Eastern District, Eastern Section.*

Liberty St.,	High School building,	Wood,	8	131	By furnaces,	Privies in sch'l yard.
Boston St.,	Burrill Grammar b'l'g,	"	4	54	By stoves,	Privies in sch'l yard, brick vault.
Franklin St.,	Corbett " "	Brick,	16	51	By steam direct and indirect radiators.	Privies in basement.

Consolidated Report. — Sanitary Condition of Schoolhouses — Continued.

Ventilation.	Remarks.
Shaft,	Improved ventilation and sanitary. Sanitary order complied with.
"	Improved ventilation and sanitary. Sanitary order complied with.
Fair,	- -
"	- -
Poor,	- -
"	Improved ventilation. Complied with.
Shaft,	- -
Poor,	- -
Shaft,	- -
- -	- -
Poor,	- -
"	- -
Fair,	- -
Shaft — fair,	- -
" "	- -
Poor,	- -
Bad,	Ventilation and sanitary closets. Complied with.
Poor,	- -
Fair,	- -
"	- -
Good,	- -
Fair,	- -
Smead,	- -
"	- -
Bad,	Improved ventilation and sanitary closets. Complied with.
Poor,	- -
Good,	- -
Poor,	- -
- -	Watchman, red lights, gongs and fire escapes. Complied with.
- -	Fire escapes on each end. Complied with.

City of Lynn (*High and Grammar*).

Sam'l C. Hunt, *Inspector, etc., Eastern District, Eastern Section.*

None. Badly heated and ventilated. Top and bottom registers.	[See general remarks on school buildings.]*
Top and bottom registers,	- -
Registers near floors,	- -

* New brick schoolhouse, twenty class-rooms, contracted for. Heating and ventilating by Prof. Woodbridge, Superintendent Institute of Technology.

Consolidated Report. — Sanitary Condition of Schoolhouses — Continued.

City of Lynn (*High and Grammar*) — Concluded.

Location.	Name of Building.	Materials.	Number of Class Rooms.	Average No. of pupils in each room.	Means of Heating.	Sanitary Appliances.
Essex St., .	Ingalls Grammar b'l'g,	Brick,	16	60	By steam direct and indirect.	Privies in basement.
Warren St., .	Shepard " "	"	12	54	By steam direct radiators.	" "
Maple St., .	Sanborn " "	"	8	64	By improved system heating and ventilating.	
Boston St., .	Ward One " "	Wood,	5	45	By steam direct radiators.	Privies in basement.
Ireson St., .	Whiting " "	Brick,	12	51	By steam direct radiators.	Privies in sch'l yard.

City of Lynn (*Primary School Buildings*).

Lynnfield St., .	Primary School B'l'g,	Wood,	*-	-	- -	Privies in sch'l yard.
Beach St., .	" "	"	4	40	By steam direct, .	" "
Baltimore St., .	" "	"	8	35	" " " .	" in basement.
Blossom St., .	" "	"	8	45	" " indirect,	" in sch'l yard.
Boston St., .	" "	"	1	56	By stoves, . .	" "
Chatham St., .	" "	"	1	64	" " . .	" "
Cottage St., .	" "	"	2	60	" " . .	" "
Central St., .	" "	"	5	60	" " . .	" "
Chase Avenue, (Centre).	" "	"	2	65	By jacketed stoves,	" in basement.
Elm St., . .	" "	"	2	65	By stoves, . .	" in sch'l yard.
Fayette St., .	" "	"	2	67	" " . .	" "
Franklin St., .	" "	"	2	60	" " . .	" "
Franklin St. Cobbett y'rd.	" "	Brick,	4	58	By steam indirect,	" in basement.
Grove St., .	" "	Wood,	2	60	By stoves, . .	" in sch'l yard.
George St., .	" "	"	2	60	" " . .	" "
Jackson St., .	" "	"	2	60	By jacketed stoves,	" in basement.
Laighton St., .	" "	"	2	60	By stoves, . .	" in sch'l yard.
Myrtle St., .	" "	"	2	60	" " . .	" "
Parrott St., .	" "	Brick,	6	42	" " . .	" "
Red Rock St., .	" "	"	2	65	By jacketed stoves,	" in basement.
School St., .	" "	Wood,	6	50	By stoves, . .	" in sch'l yard.

Town of Ipswich.

Central St., .	High School building,	Wood,	1	52	By furnaces, . .	Privies in sch'l yard.
" .	Manning Grammar building.	"	2	48	" " . .	" "
Essex Road, .	Cogswell Intermed'te and Primary.	"	2	52	" stoves, . .	" "

* Not now used for school-rooms.

Consolidated Report. — Sanitary Condition of Schoolhouses — Continued.

City of Lynn (*High and Grammar*) — Concluded.

Ventilation.	Remarks.
Wooden shafts and central tower,	-
Top and bottom registers,	-
Modern improvements,	[See general remarks on school buildings. See page 82.]
Top registers and flue in chimney, ventilated wooden shafts.	-
Top and floor registers, wooden shafts and ventilators to roof.	Recommend improved system ventilating and heating.

City of Lynn (*Primary School Buildings*).

Window boards and flue in chimney,	Discontinued.
" " and wooden ducts,	-
Modern improvements,	[See general remarks on school buildings.]
" "	" " "
Flues in chimneys,	-
Flues in chimneys and window boards,	-
" " "	-
" " "	-
Modern improvements,	[See general remarks on school buildings.]
Flues in chimneys and window boards,	-
Patent window ventilators,	-
Wooden ducts and boards,	-
Window boards and flues in rear,	-
" " "	-
Window boards and wooden ducts,	-
Modern improvements,	[See general remarks on school buildings.]
Window boards and wooden ducts,	-
" " "	-
" " "	-
Modern improvements,	[See general remarks on school buildings.]
Various devices,	-

Town of Ipswich.

Double windows and doors,	-
Outlet top and bottom registers,	-
Doors and windows,	Order for wood-house, complied with.

Consolidated Report. — Sanitary Condition of Schoolhouses — Continue

TOWN OF IPSWICH — Concluded.

LOCATION.	NAME OF BUILDING.	Materials.	Number of Class Rooms.	Average No. of pupils in each room.	Means of Heating.	Sanitary Applian
Central St., .	North Intermediate and Primary.	Wood,	2	55	By stoves, . .	Privies in sch'l y
South Village,	South Intermediate and Primary.	"	2	57	" " . .	" "
L. Parish, .	Linebrook Mixed Primary.	"	2	54	" " . .	" "
Rowley Turnpike.	Village Mixed, . .	"	1	20	" " . .	" "
Topsfield Road,	Willowdale Mixed, .	"	1	17	" " . .	" "
Essex Road, .	Candlewood " .	"	1	9	" " . .	" "
Beach St.. .	Argilla " .	"	1	18	" " . .	" "
Spring St., .	Spring St. " .	"	1	55	" " . .	" "

TOWN OF LYNNFIELD.

Centre Village,	Centre School b'l'ng,	Wood,	1	47	By stoves, . .	Privies in sch'l y
South "	South Grammar "	"	1	28	" " . .	" "
" "	South Primary "	"	1	30	" " . .	" "

TOWN OF MIDDLETON.

Centre Village,	Grammar and Primary School.	Wood,	2	36	By stoves, . .	Privies in sch'l y
North "	School building ungraded.	"	1	25	" " . .	" "
Howes Crossing (East).	School building ungraded.	"	1	32	" " . .	" "

TOWN OF ESSEX.

Essex Falls, .	School building, .	Wood,	2	30	By stoves, . .	Privies in sch'l y
Ipswich Road,	North Primary Sch'l building.	"	1	9	" " .	" "
Central, . .	Primary School b'l'g,	"	2	30	" " . .	" "
South, . .	Mixed " "	"	1	18	" " . .	" "
East, . .	Primary " "	"	1	20	" " . .	" "
Thompson I'l'd,	Grammar and Primary School b'l'g.	"	2	26	" " . .	" "

CITY OF GLOUCESTER.

Beacon St., .	Beacon St. Primary, .	Wood,	2	53	By stoves, . .	Privies in sch'l ya
Park St., . .	Babson Mixed, . .	Brick,	8	45	By steam, direct and indirect.	" "
W. Gloucester,	Bray " . .	Wood,	1	56	By stoves, . .	" "

Consolidated Report. — Sanitary Condition of Schoolhouses — Continued.

TOWN OF IPSWICH — Concluded.

Ventilation.	Remarks.	
Doors and windows, ...	Order, sanitary, complied with.	
" "	Order, sanitary, complied with.	Recommended Red Rock system.
" "	-	-
" "	-	-
" "	-	-
" "	Order, sanitary, complied with.	
" "	-	-
" "	-	-

TOWN OF LYNNFIELD.

Doors and windows and window ventilating boards.	-	-
Doors and windows and window ventilating boards.	-	-
Doors and windows and window ventilating boards.	-	-

TOWN OF MIDDLETON.

Doors and windows; window ventilating boards.	Sanitary order, complied with.	
Doors and windows; window ventilating boards.	"	"
Doors and windows; window ventilating boards.	"	"

TOWN OF ESSEX.

By ventilation in ceiling, ...	Sanitary order, complied with.	
By doors and windows, ...	-	-
" "	Sanitary order, complied with.	
By opening in ceiling, ...	-	-
- -	-	-
Not properly heated or ventilated, . .	Sanitary order, complied with.	

CITY OF GLOUCESTER.

Door and window boards, inadequate, .	-	-
Modern improvements, ...	-	-
Doors and windows, inadequate, . . .	-	-

Consolidated Report. — Sanitary Condition of Schoolhouses — Continued.

CITY OF GLOUCESTER — Concluded.

LOCATION.	NAME OF BUILDING.	Materials.	Number of Class rooms.	Average No. of pupils in each room.	Means of Heating.	Sanitary Appliances.	
Bay View,	Bradstreet Grammar,	Wood,	4	48	By stoves,	Privies in sch'l yard	
Prospect St.,	Collins Group Grammar.	"	8	43	By furnaces,	"	"
Middle and Wash'n Sts.,	Forbes (Town Hall),	"	7	44	By stoves,	"	"
W. Gloucester,	Haskell Mixed,	"	2	56	" "	"	"
Eastern Ave.,	Hildreth Primary,	"	6	44	By steam, direct and indirect.	"	"
Magnolia,	Blynman Mixed,	"	1	34	By stoves,	"	"
Ladiesville,	Lane Grammar,	"	3	45	" "	"	"
Annisquam,	Leonard "	"	2	27	" "	"	"
Mt. Vernon St.,	Mt. Vernon Primary,	"	4	39	By stoves and furnaces.	"	"
Western Ave.,	Parsons Mixed,	"	1	36	By stoves,	"	"
Plum St.,	Point Grammar,	"	6	41	By steam, direct and indirect.	"	"
Chapel St.,	Point Primary,	"	4	42	By stoves,	"	"
Riverdale,	Riggs Grammar,	"	2	38	" "	"	"
Elm St.,	Rogers Primary,	"	2	54	" "	"	"
Friend St.,	Sawyer Grammar,	"	12	41	By furnaces,	"	"
Rocky Neck,	Wonson Primary,	"	2	34	By stoves,	"	"
Stone Court,	Stone "	"	2	40	" "	"	"
Washington,	Forbes "	"	2	30	" "	"	"
Dale Ave.,	High School b'l'ng,	Brick,	8	40	—*	—*	

TOWN OF ROCKPORT.

Pigeon Cove,	North Village,	Wood,	2	51	By stoves,	Privies in sch'l yard
Pigeon Hill,	Pigeon Cove,	"	2	47	" "	" "
Beach St.,	Centre,	"	1	40	" "	" "
Mt. Pleasant,	Mt. Pleasant,	"	2	40	" "	" "
Broadway,	Intermediate,	"	2	42	" "	" "
Town Hall,	Primary,	"	1	64	" "	" "
Broadway,	High and Grammar,	"	2	70	" "	" "

CITY OF SALEM.

Broad St.,	High Schoo. build'g,	Brick,	4	80	By furnaces,	Privies in basement
Essex St.,	Bentley Grammar School building	"	9	32	By steam, direct and indirect.	" "
Flint St.,	Bowditch Grammar School building	"	13	45	By steam direct,	" "
Washingt'n Sq.,	Phillips Grammar School building.	"	8	30	" " "	" "

* Smead & Co. warming and ventilating system.

Consolidated Report. — Sanitary Condition of Schoolhouses — Continued.

CITY OF GLOUCESTER — Concluded.

Ventilation.	Remarks.
Doors and windows, inadequate,	- -
" " "	- -
" " "	Recommend modern improvements; heating, ventilation.
" " "	- -
Modern improvements, 1886,	[See general remarks on school buildings.]
Doors and windows, inadequate,	- -
" " "	- -
" " "	- -
" " "	- -
" " "	- -
Modern improvements, 1886,	[See general remarks on school buildings.]
Doors and windows, inadequate,	- -
" " "	- -
" " "	Recommend modern improvements; heating, ventilation.
" " "	- -
" " "	- -
" " "	- -
-* -	[See general remarks on school buildings.]

TOWN OF ROCKPORT.

Doors and windows,	Sanitary orders, complied with.
" "	" "
" "	" "
Improved ventilation, 1889,	Sanitary orders, complied with. Improved ventilation.
Doors and windows,	Sanitary orders; additional way of egress; complied with.
By flues in chimneys,	- -
Doors and windows,	Recommend modern improvements in heating and ventilation.

CITY OF SALEM.

Insufficient, Eureka ventilators,	Order for additional windows, complied with.
Red Rock system,	Red Rock system ventilating, complied with.
Martin's system, 1869,	Martin's system heating and ventilating, 1869. [See general remarks on school buildings.]
Old style, insufficient,	- -

* Smead & Co. warming and ventilating system.

Consolidated Report. — Sanitary Condition of Schoolhouses — Concluded

Location.	Name of Building.	Materials.	Number of Class Rooms.	Average No. of pupils in each room.	Means of Heating.	Sanitary Appliance
New Bedford, .	Fourth St. School, .	Wood,	6	40	Stoves, ...	Automatic flush basement.
Taunton, . .	Bay St. " .	"	8	50	Jacketed stoves, .	Vault in yard, sew connections.
" . .	Cohannet St. " .	Brick,	10	50	Hot air, . . .	Flush trough yard.
" . .	Whittenton " .	"	5	50	Jacketed stoves, .	Vault in yard, sew connection.
" . .	Weir " .	"	10	50	Hot air and steam,	Vault in yard, sew connection.
Attleborough, .	High " .	Wood,	*2	65	" "	Flush vault in ba ment.
" .	Academy " .	"	2	44	Hot air, . . .	Flush trough yard.
" .	Central " .	"	6	46	"	Flush trough yard.
" .	New " .	"	3	67	Hot air and steam,	Flush trough yard.
North Attleborough.	High " .	"	2	69	" "	Flush trough basement.

* One occupied.

Consolidated Report. — Sanitary Condition of Schoolhouses — Continued.

City of Salem — Concluded.

Ventilation.	Remarks.
Old style, Eureka ventilators, . . .	- -
Insufficient, " " . . .	- -
" " " . . .	- -
Jacketed stoves in basement; special chimney flue.	Order for ventilation partially completed; building repainted, interior and exterior.
Top and bottom registers, Eureka ventilat's; outlets in chimneys with special flues.	For account of air tests, see page 77. [See general remarks on school buildings.]
Top and bottom registers, Eureka ventilat's,	For account of air tests, see page 78. [See general remarks on school buildings.]
Top and bottom registers, Eureka ventilat's,	For account of air tests, see page 77. [See general remarks on school buildings.]
Top and bottom registers, Eureka ventilat's,	[See general remarks on school buildings.]
Top and bottom registers, Eureka ventilat's,	Air tests, page 78. [See general remarks on school buildings.]
Top and bottom registers, Eureka ventilat's,	New floors laid. [See general remarks on school buildings.]
Top and bottom registers, Eureka ventilat's,	Account of air tests, see page 78. [See general remarks on school buildings.]
Top and bottom registers, Eureka ventilat's,	Foul-air ducts from basement to roof. [See general remarks on school buildings.]
Top and bottom registers, Eureka ventilat's,	[See general remarks on school buildings.]

Town of Saugus.

Doors and windows; window ventilating boards.	- -
Doors and windows, ...	Sanitary order, complied with.
Doors and windows; window ventilating boards.	" "
Doors and windows, ...	" "
Doors and windows; window ventilating boards.	" "
Doors and windows, ...	[See general remarks on school buildings.]
Doors and windows; window and ventilating boards.	- -

Town of Nahant.

Top and bottom registers, ...	Town Hall.
Window ventilating boards, ...	Sanitary order, complied with.
Door transoms, ...	" "

Town of Beverly.

By top and bottom registers, . . .	Order on privies, complied with.
By improved system in each room, . .	Order on sanitary, "
By registers, inadequate, ...	Sanitary order, "

Consolidated Report. — Sanitary Condition of Schoolhouses — Continue

TOWN OF BEVERLY — Concluded.

LOCATION.	NAME OF BUILDING.	Materials.	Number of Class Rooms.	Average No. of pupils in each room.	Means of Heating.	Sanitary Appliar
Essex St.,	Briscoe Annex Grammar building.	Wood,	4	44	By furnaces,	Privies in sch'l y
Rantoul St.,	Washington Grammar building.	"	8	45	" "	" "
Hale St.,	Cove Mixed building.	"	3	37	" "	" "
Haskell St.,	Farms " "	"	3	30	" "	" "
Conant St.,	Bass River Mixed "	"	2	30	By stoves,	" "
Essex St.,	Centreville " "	"	1	40	" "	" "
Dodge Village,	Dodge's Row " "	"	1	18	By furnaces,	" "
Rialside Vill'ge,	Rialside " "	"	1	35	" "	" "

TOWN OF GROVELAND.

North Village,	North Primary b'ld'g,	Wood,	1	20	By stoves,	Privies in sch'l y
So. Groveland,	South " "	"	1	46	" "	" "
" "	South Grammar "	"	1	41	" "	" "
" "	So. Intermediate "	"	1	57	" "	" "
" "	2d " "	"	1	56	" "	" "

TOWN OF HAMILTON.

North Village,	North School building,	Wood,	1	19	By stoves,	Privies in sch'l y
East "	East " "	"	1	25	" "	" "
South "	South " "	"	1	24	" "	" "
West "	West " "	"	1	27	" "	" "

TOWN OF MANCHESTER.

School St.,	Centre Intermediate building	Wood,	1	35	By stoves,	Privies in sch'l y
Central Sq.,	Town Hall building,	"	1	42	By furnaces,	" "
Bennet St.,	High and Grammar building.	"	2	30	" "	" "
Plains,	Plains Mixed building,	"	1	32	By stoves,	" "
W Manchester (Newport).	W. Manchester Primary building.	"	1	30	" "	" "
Cove Village,	Cove Mixed building,	"	1	12	Jacketed stoves,	" "
Row "	Row " "	"	1	28	By stoves,	" "

TOWN OF DANVERS.

Danvers Plains,	Holton High School building.	Wood,	1	102	By steam, direct and indirect.	Privies in baseme
" "	Maple St. Grammar building.	"	3	61	By stoves,	Privies in sch'l ya

Consolidated Report. — Sanitary Condition of Schoolhouses — Continued.

Town of Beverly — Concluded.

Ventilation.	Remarks.
By registers, inadequate,	Sanitary order, complied with.
By windows and door transoms,	- -
By improved system,	- -
By windows and door transoms,	- -
Top and bottom registers, inadequate,	- -
" " "	Sanitary order, complied with.
By windows and door transoms,	" " "
" " "	- -

Town of Groveland.

Doors and window ventilating boards,	Sanitary order, complied with.
" " "	" " "
" " "	- -
" " "	Sanitary order, complied with.
" " "	- -

Town of Hamilton.

By doors and windows,	- -
" "	Sanitary order, complied with.
" "	" " "
" "	- -

Town of Manchester.

By window ventilating boards,	Sanitary order, complied with.
By doors and windows,	- -
Top and bottom registers,	Recommend Red Rock system.
By doors and windows,	- -
" "	[Discontinued for present.]
By Red Rock system,	[See general remarks on school buildings.]
No system,	Recommend Red Rock system.

Town of Danvers.

Fair. Air boxes in basement,	- -
Ceiling opening and attic window,	- -

Consolidated Report. — Sanitary Condition of Schoolhouses — Continue

TOWN OF DANVERS — Concluded.

LOCATION.	NAME OF BUILDING.	Materials.	Number of Class Rooms.	Average No. of pupils in each room.	Means of Heating.	Sanitary Applian
Danvers Plains,	Park St. Primary b'l'g,	Wood,	4	45	By stoves and furnaces.	Privies in sch'l y
Danversport, .	Water St. Mixed "	"	3	75	By stoves, . .	" "
" " .	Endicott St. Inter. and Primary b'l'g.	"	1	46	" " . .	" "
Putnamville, .	Locust St Mixed b'l'g,	"	1	25	" " . .	" "
Swan's Crossing	Putnam Mixed b'l'g,	"	2	43	" " . .	" "
Danvers Centre,	Wadsworth Inter and Primary building.	"	3	42	" " . .	" "
Tapleyville, .	Holton Grammar and Primary building.	"	3	57	" " . .	" "
Sylvan St., .	Sylvan St. Mixed b'l'g,	"	1	34	" " . .	" "
East Danvers, .	East Village " "	"	1	30	" " . .	" "

TOWN OF PEABODY.

Stevens St., .	High School building,	Wood,	1	90	By furnaces, . .	Privies boys, s y'd; girls, base
Peirpont St., .	Wallis Grammar "	Brick,	10	50	By steam, direct, .	Privies in sch'l y
Franklin St., .	Centre " "	"	12	49	By steam, indirect,	" "
Central St., .	Bowditch Grammar and Primary b'l'g.	Wood,	4	53	By furnaces, . .	" "
South Peabody,	Rockville Primary "	"	4	37	" " . .	" "
Tremont St., .	Endicott " "	"	4	63	By stoves, . .	" "
Andover St., .	Felton " "	Brick,	1	35	" " . .	" "
West Peabody,	W'st Village Mix'd "	Wood,	2	41	By furnaces, . .	" "
Stevens St., .	Overflow Primary "	"	1	40	By stove, . .	" "

TOWN OF TOPSFIELD.

Centre, . .	Grammar School b'l'g,	Wood,	1	16	By warm water, .	Privies in sch'l y
North, . .	Mixed " "	"	1	14	By stoves, . .	" "
South, . .	Mixed " "	"	1	20	" " . .	" "
Centre, . .	Int'rmediate " "	"	1	12	By warm water, .	" "
East, . .	Mixed " "	"	1	47	By stoves, . .	" "
Centre, . .	Primary " "	"	1	33	By warm water, .	" "

TOWN OF MARBLEHEAD.

Pleasant St., .	High School building,	Brick,	2	42	By furnace, . .	Privies in sch'l ya
Elm St., . .	Story Grammar "	"	7	47	" " . .	" "
Spring St., .	Sewall Grammar and Primary Sch'l b'l'g.	Wood,	3	35	By stoves, . .	" "

Consolidated Report. — Sanitary Condition of Schoolhouses — Continued.

TOWN OF DANVERS — Concluded.

Ventilation.	Remarks.
Top window ventilators, ...	Sanitary order, complied with.
" "	" " "
" "	" " "
" "	- -
" "	- -
Window ventilating boards, ...	Sanitary order, complied with.
" "	" " "
" "	- -
" "	- -

TOWN OF PEABODY.

Cold-air shaft to chimney, ...	- -
Mayhew's ventilators in class rooms, . .	- -
Cold-air boxes in basement and shafts to chimneys.	Whitewash and disinfectants freely used.
Air shafts in chimneys, ...	Sanitary order, complied with.
Top and bottom registers, ...	" " "
" "	" " "
Ceiling opening, ...	- -
Top and bottom registers, ...	- -
Cold-air shafts to chimney, ...	- -

TOWN OF TOPSFIELD.

Bottom registers to flue in chimneys, . .	Stack of six lines of pipes in all.
Door transoms, doors and windows, . .	Class, cloak and recitation rooms.
Doors and windows, ...	Out-houses clean and in good repair.
Bottom registers to flue in chimney, . .	" " "
Door transoms, doors and windows, . .	" " "
Bottom registers to flue in chimney, . .	" " "

TOWN OF MARBLEHEAD.

By flues to chimney, ...	- -
" " "	- -
Window ventilating boards, doors and windows.	- -

Consolidated Report. — Sanitary Condition of Schoolhouses — Continued.

TOWN OF MARBLEHEAD — Concluded.

LOCATION.	NAME OF BUILDING.	Materials.	Number of Class Rooms.	Average No. of pupils in each room.	Means of Heating.	Sanitary Appliances
Orne St.,	Primary School b'l'g,	Wood,	1	50	By stoves,	Privies in sch'l yar
Barnard St.,	Primary School (Barnard). "	"	2	48	" "	" "
Hawkes St.,	Primary School "	"	2	50	" "	" "
Lee St.,	" " "	"	1	58	" "	" "
Glover St.,	" " "	"	1	64	" "	" "
Gerry St.,	Back St. " "	"	1	48	" "	" "
High St.,	Gerry " "	"	2	48	" "	" "
Mechanic St.,	Mugford " "	"	2	49	" "	" "
Farms,	Farms, Mixed "	"	1	30	" "	" "

TOWN OF SWAMPSCOTT.

Redington St.,	High School building,	Wood,	1	47	By steam direct,	Privies in sch'l yar
Essex St.,	School building,	"	1	37	By stoves,	" "
Beach St.,	Primary and Intermediate School b'l'g,	"	2	35	" "	" "
Pine St.,	Primary and Intermediate School b'l'g,	"	2	35	By steam,	" "
Farms,	Primary School "	"	1	25	By stoves,	" "
Redington St.,	1st and 2d Grammar School building.	"	2	47	By steam,	" "

TOWN OF WENHAM.

Neck,	School building,	Wood,	1	25	By stoves,	Privies in sch'l yar
Centre,	Grammar building,	"	1	26	" "	" "
Centre,	Primary "	"	1	26	By stove,	" "
West,	School b'l'g, ungraded,	"	1	30	" "	" "
East,	" " "	"	1	22	" "	" "

TOWN OF BOXFORD.

[Graduates from Grammar School sent to High School, Newburyport.]

District No. 1,	School building,	Wood,	1	16	By stoves,	Privies in sch'l yar
" No. 2,	" "	"	1	38	" "	" "
" No. 3,	" "	"	1	18	" "	" "
" No. 4,	" "	"	1	26	" "	" "
" No. 5,	" "	"	1	15	" "	" "
" No. 6,	" "	"	1	9	" "	" "

Consolidated Report. — Sanitary Condition of Schoolhouses — Continued.

TOWN OF MARBLEHEAD — Concluded.

Ventilation.	Remarks.
Window ventilating boards, . . .	Sanitary order, complied with.
" " " . . .	" "
Window ventilating boards, doors and windows.	" "
Window ventilating boards, . . .	" "
" " " . . .	" "
Window ventilating boards, doors and windows.	" "
Window ventilating boards, . . .	" "
" " " . . .	" "
" " " . . .	" "

TOWN OF SWAMPSCOTT.

By window ventilating boards, doors, windows and fireplaces.	Sanitary order, complied with.
By doors and windows, ...	- -
" " "	- -
By window ventilating boards, . . .	- -
" " " . . .	Sanitary order, complied with.
Crowded; registers, fireplaces, window ventilating boards.	" "

TOWN OF WENHAM.

Ceiling opening, 2 ft. 5 in. by 2 ft., . .	Improved ventilation.
In Town Hall, ...	Sanitary order, complied with.
Ceiling opening, 2 ft. by 2 ft., . . .	" "
Doors and windows, ...	- -
" "	Sanitary order, complied with.

TOWN OF BOXFORD.

[Graduates from Grammar School sent to High School, Newburyport.]

Doors and windows, window ventilating boards.	- -
Doors and windows, ...	- -
" "	- -
" "	- -
" "	- -
" "	- -

Consolidated Report. — Sanitary Condition of Schoolhouses — Continu

F. W. MERRIAM, *Inspector.*

LOCATION.	NAME OF BUILDING.	Materials.	Number of Class Rooms.	Average No. of pupils in each room.	Means of Heating.	Sanitary Appls
Adams, . .	Liberty Street, . .	Brick,	9	45	Furnaces, . .	Water closets,
" . .	Commercial Street, .	"	8	43	" . .	" "
" . .	Renfrew, . . .	"	8	50	" . .	" "
" . .	Hoosac Street, . .	"	*–	36	Warm air, . .	Dry closets.
" . .	Maple Grove, . .	Wood,	2	44	Stoves, . . .	Privies in yard
" . .	Zylonite, . . .	"	2	43	" . . .	" "
Bernardston, .	Powers Institute, .	"	2	45	" . . .	Privies, fair.
" .	District Two, . .	"	1	30	Stove, . . .	" "
Buckland, .	Village Grammar, .	Brick,	4	32	Stoves, . . .	Privies in yard
" .	Village Primary, .	Wood,	1	33	Stove, . . .	" "
Cheshire, . .	Cheshire Academy, .	"	†–	30	Stove heaters, .	Water closets,
Charlemont, .	Village School, . .	"	2	33	Stoves, . . .	Privies in yard
Dalton, . .	Centre, . . .	"	2	43	" . . .	Privies.
" . .	Centre Primary, .	"	2	34	" . . .	"
" . .	Craneville, . . .	"	2	27	" . . .	"
" . .	Grammar, . . .	"	2	33	" . . .	"
Deerfield, .	Green River, . .	"	3	55	" . . .	"
" .	Deerfield Street, .	"	3	33	" . . .	"
Erving, . .	Village School, . .	"	2	32	" . . .	"
Gt. Barrington,	High and Grammar, .	Brick,	2	72	Direct steam, .	"
"	Primary, . . .	Wood,	3	48	Stoves, . . .	"
"	Housatonic, . .	"	†–	47	Direct steam, .	"
Greenfield, .	High, ...	Brick,	5	37	" " .	Water closets.
" .	School Street, . .	"	4	38	Hot air and direct steam.	" "
" .	Chapman Street, .	Wood,	4	40	Direct steam, .	" "
" .	Main Street, . .	Brick,	4	40	Stoves, . . .	" "
Hinsdale, .	Church Street, . .	Wood,	4	42	" . . .	Privies.
" .	High, ...	"	1	25	" . . .	"
Lee, . . .	"	"	2	69	Direct steam, .	"
" . . .	Fern Cliff, . . .	"	2	29	Stoves, . . .	"
" . . .	Centre, . . .	"	2	34	" . . .	"
Lenox, . .	Village or High, .	"	4	40	" . . .	Water closets.
Montague, .	Oakman, . . .	Brick,	6	50	Furnac'sandstoves,	Privies.
" .	Central Street, . .	"	4	50	Furnaces, . .	"
" .	Eighth Street, . .	"	4	45	" . .	"

* Eight; six used.

† Six; five used.

Consolidated Report. — Sanitary Condition of Schoolhouses — Continued.

F. W. MERRIAM, *Inspector.*

Ventilation.	Remarks.
Insufficient,	Two furnaces take air from outside, and two from basement; each room has small cold foul-air flue, but very little movement.
"	Two furnaces take air from outside, and two from basement, since changed to outside; each room has a fireplace, but throats were closed with boards.
"	Each room has small cold foul-air flue, but very little movement.
Very fair,	Provided with the Smead and Northcote System, and was working very satisfactorily.
None, very bad,	An old building, in bad repair.
" "	Being provided with proper ventilation.
None,	Since provided with furnace and flues.
"	- -
"	Since provided with approved system.
"	Since improved.
Insufficient,	No supply, small foul-air flues against chimney flue, with some movement.
None, very bad,	An old building, in bad repair.
None,	Since provided with furnaces and registers.
"	" " "
"	" " "
"	To be abandoned.
None, very bad,	Plans have been submitted and approved for enlargement, and system of ventilation.
None,	Now under consideration.
"	- -
"	Since provided with the Fuller & Warren Company's system of ventilation.
None, very bad,	Since abandoned.
None,	Since provided, same as High and Grammar.
"	Part of the rooms have ceiling ventilators, but no supply of fresh air.
Insufficient,	Heated by the Pease combination, hot-air and steam; foul-air flues heated by hot air pipes running through them, but too small.
None,	Cold foul-air flues, but no movement.
"	" " " "
"	Since improved, but not sufficient.
"	" " "
"	- -
"	Since provided with the Fuller & Warren Company's warming and ventilating system.
"	- -
None, very bad,	Water closets are in corridors; automatic flushing, but no ventilation.
Insufficient,	Supply small; foul-air flues small and not heated.
"	" " " "
"	" " " "

DISTRICT No. 1 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	NUMBER EMPLOYED.				Sanitary Condition	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
City of Lowell — Continued.								
United States Bunting Co.,	Worsted cloths and bunting,	175	275	2	29	Fair,	None,	–
Hamilton Manufacturing Co.,	Prints and cottons,	2000	1600	1	101	Good,	Certificates for children,	Complied.
Wm. Walker & Son,	Wool dress goods,	52	23	–	2	Poor,	Water closet to be designated,	Complied.
Shaw Stocking Co.,	Wool hosiery,	30	295	–	3	Good,	Time table to be posted,	Complied.
Lowell Hosiery Co,	Cotton hosiery,	100	200	–	4	Good,	Machine shafting and fly-wheel to be guarded, time tables to be posted,	Complied.
Pickering Knitting Co.,	Cotton shirts and drawers,	30	120	–	7	Good,	Certificates for children,	Complied.
Thorndyke Manufacturing Co.,	Elastic web,	55	65	–	3	Fair,	Certificates for children,	Complied.
Whittier Cotton Mills,	Yarns and twines,	10	44	–	–	Good,	Time table to be posted,	Complied.
Rice & Co,	Wire goods,	45	–	–	4	Good,	None,	–
Wm. H. Parker & Sons,	Spools and bobbins,	150	–	–	5	Poor,	Certificates for children, time tables posted and cards for illiterate minors,	Complied.
Otis Allen & Son,	Wooden boxes,	40	–	–	–	Good,	None,	–
Arey, Maddock & Locke,	Leather,	150	–	–	–	Fair,	Fly-wheel to be guarded,	Complied.
Scripture's Laundry,	Laundry,	5	40	–	–	Good,	None,	–
Lladneck Dye and Print Works,	Dyeing and printing,	37	7	–	1	Fair,	Elevator openings to be guarded, water closets to be designated,	Complied.
E. Hapgood & Son,	Wool mattresses,	9	4	–	–	Fair,	Water closets to be designated,	Complied.
J. S. Jaques Shuttle Co.,	Shuttles,	30	–	–	–	Good,	None,	–

Consolidated Report. — Sanitary Condition of Schoolhouses — Continued.

Ventilation.	Remarks.
None, bad,	To be abandoned.
None,	– –
"	– –
"	– –
"	Steam-heating apparatus has been removed, and supplied with the Mahony-Smith system of warming and ventilating, including the thorough ventilat'n of closets and urinals.
"	Orders transferred to new Church Street School.
"	Orders transferred to new Greylock School.
"	– –
"	– –
"	Originally heated by furnaces.
Insufficient,	– –
None; in part very bad,	An old building, since improved some.
" " "	" " "
None,	Each room has a fire-place, but not used.
Insufficient,	Each room has small foul-air flue, but not heated, and very little movement.
None,	There is a galvanized iron flue running through the building, connected with the several rooms, but not heated, and of little use. This building is now under consideration.
"	Since provided with an approved system of warming and ventilating.
"	Since improved some.
"	Order transferred to Glendale building, as the appropriation was insufficient.
"	Provided with the Fuller & Warren Company's warming and ventilating system.
"	Rooms are good height and well lighted, but visited in a warm day, and no order issued.
Fair,	School not in session when visited.
None,	" " "
Fair,	" " "
"	" " "
Insufficient,	Since greatly improved by an additional furnace, and enlarged foul-air pipes, and water-closets removed from main basement to annex and ventilated.
None,	Since provided with ventilating stack, and jacketed stoves.
Insufficient,	Each room has coal grate which is used and works well as far as size permits; also a foul-air flue with register near ceiling.
Small flues in each room, but useless,	– –
Flues connected with heated brick shaft 2 by 4 feet.	Is an improvement, but does not thoroughly ventilate.
Large flues in each room opening in attic,	Do not ventilate, but depend upon the windows.
Flues in each room, but useless,	Have to depend upon the windows.
One small flue opening into attic,	No draught; have to depend upon the windows.

Consolidated Report. — Sanitary Condition of Schoolhouses — Continu

CITY OF GLOUCESTER — Concluded.

LOCATION.	NAME OF BUILDING.	Materials.	Number of Class Rooms.	Average No. of pupils in each room.	Means of Heating.	Sanitary Appliances
Bay View,	Bradstreet Grammar,	Wood,	4	48	By stoves,	Privies in sch'l yards
Prospect St.,	Colline Group Grammar.	"	8	43	By furnaces,	" "
Middle and Wash'n Sts.,	Forbes (Town Hall),	"	7	44	By stoves,	" "
W. Gloucester,	Haskell Mixed,	"	2	56	" "	" "
Eastern Ave.,	Hildreth Primary,	"	6	44	By steam, direct and indirect.	" "
Magnolia,	Blynman Mixed,	"	1	34	By stoves,	" "
Lanesville,	Lane Grammar,	"	3	45	" "	" "
Annisquam,	Leonard "	"	2	27	" "	" "
Mt. Vernon St.,	Mt. Vernon Primary,	"	4	39	By stoves and furnaces.	" "
Western Ave.,	Parsons Mixed,	"	1	38	By stoves,	" "
Plum St.,	Point Grammar,	"	6	41	By steam, direct and indirect.	" "
Chapel St.,	Point Primary,	"	4	42	By stoves,	" "
Riverdale,	Riggs Grammar,	"	2	38	" "	" "
Elm St.,	Rogers Primary,	"	2	54	" "	" "
Friend St.,	Sawyer Grammar,	"	12	41	By furnaces,	" "
Rocky Neck,	Wonson Primary,	"	2	34	By stoves,	" "
Stone Court,	Stone "	"	2	40	" "	" "
Washington,	Forbes "	"	2	40	" "	" "
Dale Ave.,	High School b'l'ng,	Brick,	8	40	—*	—*

TOWN OF ROCKPORT.

Pigeon Cove,	North Village,	Wood,	2	51	By stoves,	Privies in sch'l yards
Pigeon Hill,	Pigeon Cove,	"	2	47	" "	" "
Beach St.,	Centre,	"	1	40	" "	" "
Mt. Pleasant,	Mt. Pleasant,	"	2	40	" "	" "
Broadway,	Intermediate,	"	2	42	" "	" "
Town Hall,	Primary,	"	1	64	" "	" "
Broadway,	High and Grammar,	"	2	70	" "	" "

CITY OF SALEM.

Broad St.,	High School build'g,	Brick,	4	50	By furnaces,	Privies in basement
Essex St.,	Bentley Grammar School building.	"	9	32	By steam, direct and indirect.	" "
Flint St.,	Bowditch Grammar Schoo. building.	"	13	45	By steam direct,	" "
Washingt'n Sq.,	Phillips Grammar School building.	"	8	30	" " "	" "

* Smead & Co. warming and ventilating system.

Consolidated Report. — Sanitary Condition of Schoolhouses — Continued.

CITY OF GLOUCESTER — Concluded.

Ventilation.	Remarks.	
Doors and windows, inadequate,	-	-
" " "	-	-
" " "	Recommend modern improvements;	heating, ventilation.
" " "	-	-
Modern improvements, 1886,	[See general remarks on school buildings.]	
Doors and windows, inadequate,	-	-
" " "	-	-
" " "	-	-
" " "	-	-
" " "	-	-
Modern improvements, 1886,	[See general remarks on school buildings.]	
Doors and windows, inadequate,	-	-
" " "	-	-
" " "	-	-
" " "	-	-
" " "	-	-
" " "	-	-
" " "	Recommend modern improvements;	heating, ventilation.
" " "	-	-
" " "	-	-
" " "	-	-
-*	-	[See general remarks on school buildings.]

TOWN OF ROCKPORT.

Doors and windows,	Sanitary orders, complied with.
" "	" "
" "	" "
Improved ventilation, 1889,	Sanitary orders, complied with. Improved ventilation.
Doors and windows,	Sanitary orders; additional way of egress; complied with.
By flues in chimneys,	- -
Doors and windows,	Recommend modern improvements in heating and ventilation.

CITY OF SALEM.

Insufficient, Eureka ventilators,	Order for additional windows, complied with.
Red Rock system,	Red Rock system ventilating, complied with.
Martin's system, 1869,	Martin's system heating and ventilating, 1869. [See general remarks on school buildings.]
Old style, insufficient,	- -

* Smead & Co. warming and ventilating system.

Consolidated Report. — Sanitary Condition of Schoolhouses — Continued

CITY OF SALEM — Concluded.

LOCATION.	NAME OF BUILDING.	Materials.	Number of Class Rooms.	Average No. of pupils in each room.	Means of Heating.	Sanitary Appliance
School St., .	Pickering Grammar School building.	Wood,	4	42	By furnaces, . .	Privies in baseme
Holly St., .	Saltonstall Grammar School building.	Brick,	7	40	" " . .	" "
Broad St., .	Oliver Grammar School building.	Wood,	6	31	" " . .	" "
Willow Ave., .	Bertram Primary School building.	Brick,	4	31	" " . .	" "
Ropes St., .	Browne Primary School building.	Wood,	6	37	" " . .	" "
Skerry St., .	Carleton Primary School building.	"	4	36	" " . .	" "
Boston St., .	Endicott Primary School building.	"	4	25	" " . .	Priv. in sch. y'd, Ful & Warren's san. clo
Fowler St. .	Lincoln Primary School building.	"	4	37	" " . .	Privies in baseme
Herbert St., .	Lynde Primary School building.	"	5	40	" " . .	Privies in sch'l y'
Dunlap St., .	Pickman Primary School building.	"	4	31	" " . .	" "
Howard St., .	Prescott Primary School building.	"	4	26	" " . .	Privies in baseme
North St., .	Upham Primary School building.	"	4	29	" " . .	" "
Ropes St., .	Naumkeag Primary School building.	Brick,	2	37	" " . .	" "

TOWN OF SAUGUS.

Central St., .	High School (Town Hall).	Wood,	2	40	By furnaces in basement.	Privies and clos in basement.
Main St., . .	Centre Gram. School,	"	1	50	By stoves, . .	Privies in sch'l y'r
" . .	Centre Primary Sch'l,	"	2	45	" " . .	" "
Grammar and Intermediate.	Cliftondale, . .	"	2	40	" " . .	" "
Grammar and Intermediate.	Oakland Vale, . .	"	1	28	" " . .	" "
Grammar and Intermediate.	West Cliftondale, .	"	2	45	By jacketed stoves,	" "
Mixed, . .	North Saugus, . .	"	1	45	By stoves, . .	" "

TOWN OF NAHANT.

Pleasant St., .	High School building,	Wood;	2	20	By furnace, . .	Privies in basemen
" " .	Intermediate and Primary.	"	2	40	By stoves, . .	Privies in sch'l y'r
Nahant St., .	Grammar, . . .	W'd & Brick.	2	20	" " . .	" "

TOWN OF BEVERLY.

Essex St., .	High School building,	Brick,	1	200	Steam, direct and indirect.	Privies in sch'l yar
Stone St., . .	South Grammar "	Wood,	8	50	Steam, direct and indirect.	" "
Essex St., .	Briscoe " "	Brick,	4	45	Steam, direct and indirect.	" "

Consolidated Report. — Sanitary Condition of Schoolhouses — Continued.

City of Salem — Concluded.

Ventilation.	Remarks.
Old style, Eureka ventilators, . . .	- -
Insufficient, " " . . .	- -
" " " . . .	- -
Jacketed stoves in basement; special chimney flue.	Order for ventilation partially completed; building repainted, interior and exterior.
Top and bottom registers, Eureka ventilat's; outlets in chimneys with special flues.	For account of air tests, see page 77. [See general remarks on school buildings.]
Top and bottom registers, Eureka ventilat's,	For account of air tests, see page 78. [See general remarks on school buildings.]
Top and bottom registers, Eureka ventilat's,	For account of air tests, see page 77. [See general remarks on school buildings.]
Top and bottom registers, Eureka ventilat's,	[See general remarks on school buildings.]
Top and bottom registers, Eureka ventilat's,	Air tests, page 78. [See general remarks on school buildings.]
Top and bottom registers, Eureka ventilat's,	New floors laid. [See general remarks on school buildings.]
Top and bottom registers, Eureka ventilat's,	Account of air tests, see page 78. [See general remarks on school buildings.]
Top and bottom registers, Eureka ventilat's,	Foul-air ducts from basement to roof. [See general remarks on school buildings.]
Top and bottom registers, Eureka ventilat's,	[See general remarks on school buildings.]

Town of Saugus.

Doors and windows; window ventilating boards.	- -
Doors and windows, ...	Sanitary order, complied with.
Doors and windows; window ventilating boards.	" "
Doors and windows, ...	" "
Doors and windows; window ventilating boards.	" "
Doors and windows, ...	[See general remarks on school buildings.]
Doors and windows; window and ventilating boards.	- -

Town of Nahant.

Top and bottom registers, ...	Town Hall.
Window ventilating boards, ...	Sanitary order, complied with.
Door transoms, ...	" "

Town of Beverly.

By top and bottom registers, . . .	Order on privies, complied with.
By improved system in each room, . .	Order on sanitary, "
By registers, inadequate, ...	Sanitary order, "

DISTRICT No. 1 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	NUMBER EMPLOYED.				Sanitary Condition	Orders Given.	Compliances.
		Males.	Females	Under 16.	14 to 16.			
CITY OF MALDEN.								
Boston Rubber Shoe Co.,	Boots and shoes,	750	650	–	24	Good,	Openings in floor of engine room to be guarded, fly-wheel and belts of dynamo to be guarded, water closets to be designated,	Complied.
Cochrane's Turkey Red Works,	Cottons,	61	5	–	2	Fair,	Fly-wheel to be guarded,	Complied.
Wiggin & Stevens,	Flint paper and glue,	26	9	–	–	Poor,	Guard gears of machines, better sanitary arrangements, self-closing gates for elevator openings, time tables to be posted, water closet to be designated,	Complied.
Howard & Frohock,	Lasts,	20	–	–	–	Poor,	None,	–
S. E. Vaughan,	Wood and paper boxes,	25	30	–	–	Good,	Time table to be posted, water closets to be designated,	Complied.
Webster & Co.,	Leather,	200	–	–	–	Good,	Belt knives to be guarded,	Complied.
John Cochrane, Jr.,	Carpets,	110	150	–	3	Poor,	Better sanitary provisions, guard elevator opening and fly-wheel, certificate for minors,	Complied.
National Steam Laundry,	Laundry,	5	60	–	–	Fair,	Shafting to be guarded, better guard for elevator openings, new cable for elevator,	Complied.

Boston Wall Paper Co.,	Wall paper,	35	–	–	7	Fair,	New cable and safety device for elevator, time tables to be posted,	Complied.
Hill's Steam Laundry,	Laundry,	5	20	–		Good,	Time table to be posted, water closets designated, machinery to be guarded,	Complied.
Wannalancett Mfg. Co.,	Web'ng and twine,	3	17	–		Good,	None,	–
B. S. Hale & Son,	Fish lines,	3	12	–		Good,	None,	–
Geo. P. Cox Last Co.,	Lasts,	40	–	–		Bad,	Fly-wheels to be guarded,	Complied.
Adams Brothers,	Cotton waste,	12	2	–		Bad,	Fly-wheels to be guarded, cut-off gears and set screws to be covered, hoistway openings to be guarded, exhaust to be provided for picker room, time table to be posted, water closets to be designated,	–
Bettinson's Steam Laundry,	Laundry,	7	20	–	–	Good,	None,	–
MAYNARD.								
Assabet Manufacturing Co.,	Woollen cloths,	580	340	11	52	Good,	None,	–
MEDFORD.								
Wainwright Manufacturing Co.,	Steam heating app.,	23	–	–		Good,	Fly-wheel and elevator openings to be guarded,	Complied.
Glenwood Dye Works,	Cotton dyeing,	23	2	–		Fair,	None,	–
Mystic Print & Dye Works,	Printed cottons,	80	15	–	4	Fair,	Certificates for children, fly-wheel and machinery to be guarded,	Complied.
New England Anderson Pressed Brick Co.,	Bricks,	75	–	–		Good,	Fly-wheel and cut-off gears to be guarded, time table posted,	Complied.

DISTRICT No. 1 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	NUMBER EMPLOYED.				Sanitary Condition	Orders Given.	Compliances.
		Males.	Females	Under 14.	14 to 16.			
MELROSE.								
Boston Rubber Shoe Co.,	Boots and shoes,	600	650	–	6	Good,	Openings in floors to be guarded, drive wheels and belts of dynamos to be guarded, water closets to be designated,	Complied.
Jonathan Barrett,	Shoes,	55	20	1	–	Good,	Time table to be posted, certificate for child,	Complied.
Small Brothers,	Furniture,	25	–	–	–	Good,	Self-closing gates for elevator openings,	*–
H. S. Albee & Co.,	Parlor beds,	12	–	–	–	Good,	None,	–
NORTH READING.								
Otis P. Symonds,	Lumber & boxes,	15	–	–	–	Good,	None,	–
PEPPERELL.								
Champion Card Paper Co.,	Card paper,	54	11	–	–	Good,	Fly-wheel to be guarded, water closets to be designated,	Complied.
Fairchild Paper Co.,	Paper,	130	70	–	2	Fair,	Fly-wheels and machinery to be guarded, guards for elevator openings to be repaired, water closets to be designated,	Complied.
Leighton Brothers,	Shoes,	300	50	–	–	Good,	None,	–
H. A. Parker & Co.,	House finish and paper,	15	–	–	–	Fair,	Fly-wheel to be guarded,	†–

READING.								
Howard Patent Metallic Brush Co.,	Brushes,	13	11		–	Good,	Time tables to be posted, water closets to be designated,	Complied.
J. W. Richardson,	Shoes,	45	45	–	3	Good,	Time tables to be posted, water closets designated, fly-wheel to be guarded, certificates for children,	Complied.
Hyde & Co.,	Fireworks,	9	3	–	–	Good,	Time table to be posted, water closets to be designated,	Complied.
E. B. Richardson,	Shoes,	41	42	–	4	Good,	Fly-wheel to be guarded, time tables posted, water closets designated, certificates for children,	Complied.
Samuel Pierce,	Organ pipes and fittings,	40	–	–	–	Good,	None,	–
C. E. Damon & Co.,	Neckties,	5	35	–	–	Good,	Time tables to be posted,	Complied.
John Holman & Co.,	Lumber,	13	–	–	–	Good,	None,	–
SHIRLEY.								
B. S. Binney,	Paper and leather board,	12	–	–	–	Fair,	None,	–
C. A. Edgarton,	Elastic web and suspenders,	40	50	2	5	Good,	Provide separate water closets and designate,	Complied.
Fredonia Cotton Mills,	Sheetings,	25	25	1	3	Fair,	Water closets to be designated,	Complied.
Samson Cordage Co.,	Braided cord,	30	60	–	2	Good,	Cut-off gears to be guarded, water closets to be designated,	Complied.
CITY OF SOMERVILLE.								
American Tube Works,	Brass and copper tubing,	150	–	–	–	Good,	None,	–
Middlesex Bleachery & Dye W'ks,	Bleaching and dyeing,	170	35	–	–	Good,	None,	–

* In process. † Use discontinued.

DISTRICT No. 1 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
City of Somerville — Concluded.								
C. W. Lyman,	Furniture,	35	–	–	–	Good,	None,	–
Union Glass Co.,	Glassware,	124	6	–	2	Fair,	Time tables to be posted, certificates for minors,	Complied.
Derby & Kilmer Desk Co.,	Desks,	70	–	–	–	Good,	Fly-wheel to be guarded, safety device repaired,	Complied.
J. N. Ball,	Pasted shoe stock,	6	24	–	–	Fair,	Time tables to be posted,	Complied.
George R. Emerson,	Pickles and canned vegetables,	4	8	–	–	Poor,	Time tables to be posted, water closets designated, fly-wheel guarded, safety device for elevator,	* –
I. H. Brown,	House finish,	18	–	–	–	Fair,	None,	–
H. H. Bryant,	Roller shades,	2	3	–	–	Fair,	Post time table, water closets to be designated,	–
C. G. Tozier,	Curtain rollers,	6	–	–	–	Fair,	None,	–
Sprague & Hathaway,	Picture frames,	30	30	–	–	Good,	Hoistway door to be guarded, time tables posted,	Complied.
Miller Brothers & Co.,	Coffins and caskets,	33	2	–	–	Good,	Time table to be posted,	Complied.
W. K. Lewis & Bros.,	Pickles and preserves,	10	25	–	–	Fair,	Guard elevator openings, time tables to be posted, water closets to be designated,	Complied.
Somerville Journal,	Printing,	13	7	–	2	Good,	Certificates for children,	Complied.

Skilton, Foote & Co.,	Pickles,	6	30	–	–	Fair,	Time tables to be posted, water closets to be designated,	Complied.
STONEHAM.								
Sanborn & Mann,	Shoes,	200	100	–	4	Good,	Machine shafting to be guarded, certificates for children,	Complied.
H. H. Mawhinney & Co.,	Shoes,	125	100	–	4	Fair,	Certificates for children, water closets to be designated, elevator repaired and new cable,	Complied.
William Tidd & Co.,	Leather,	150	–	–	–	Fair,	Belt knives to be guarded, safety device on elevator repaired,	Complied.
Stoneham Co-operative Shoe Co.,	Shoes,	20	30	–	–	Good,	Water closets to be designated,	Complied.
John M. Noyes,	Shoes,	8	7	–	–	Good,	Machine shafting to be guarded, water closets to be designated, time tables to be posted,	Complied.
S W. Jennings,	Shoes,	15	15	–	–	Fair,	Time table to be posted, water closets to be designated,	Complied.
Keen Brothers & Jones,	Shoes,	40	20	–	–	Good,	Machine shafting to be guarded, water closets designated, time tables posted,	Complied.
Stoneham Steam Laundry,	Laundry,	4	6	–	–	Good,	Additional water closet to be provided, time table to be posted,	Complied.
L. C. Shaw,	Shoes,	4	2	–	–	Fair,	Time table to be posted, water closet to be designated, machine shafting to be guarded,	Complied.
R. E. Kingsley,	Shoes,	20	10	1	–	Fair,	Time table to be posted, water closet designated, certificate for child,	Complied.
J. H Dempsey,	Shoes,	16	19	–	1	Fair,	Time table to be posted, water closet designated, certificate for child,	Complied.
Worthen & Martin,	Shoes,	11	9	–	–	Fair,	Time table to be posted, water closet to be designated,	Complied.

* Partial compliance, elevator in process.

DISTRICT NO. 1 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
Stoneham — Concluded.								
M. E. Fitzgerald,		–	–	–	–	–	To provide better guards for elevator openings, and additional water closet,	Complied.
American Co-operative Shoe Co.,		25	20	–	–	Good,	Fly-wheel to be guarded,	Complied.
W. D Byron & Son,	Curriers,	60	–	–	–	Fair,	Belt knives to be guarded,	Complied.
Baeder, Adamson & Co.,	Glue,	75	–	–	–	Fair,	None,	–
Brackett & Poole,	Shoes,	40	60	–	–	Fair,	Repair safety device on elevator, and guard openings,	Complied.
S. W. Kimball,	Shoes,	25	25	–	–	Good,	None,	–
F. Bryant,	Shoes,	14	6	–	2	Fair,	Certificate for children,	Complied.
E. P. Duncklee,	Pasted shoe stock,	6	14	–	–	Fair,	Elevator opening to be guarded, shipper on rolling machine to be changed, water closet to be designated,	–
Vinton & Jenkins,	Shoes,	70	50	–	–	Fair,	Time tables to be posted,	–
Hamilton Hay,	Shoes,	36	14	–	–	Good,	Fly-wheel and elevator well to be guarded,	Complied.
W. H. Farnham,	Lasts,	10	–	–	–	Good,	None,	–
L. P. Benton,	Shoes,	25	20	–	1	Good,	Time table to be posted, certificate for child,	Complied.
W. P. Fletcher,	Paper boxes,	20	5	–	–	Good,	Time table to be posted, water closets to be designated,	Complied.

P. Cogan & Son,	Shoes,	43	22	–	1	Poor,	Time tables to be posted, water closets to be designated, certificate for child, machine shafting to be guarded,	Complied.
Middlesex Co-operative Shoe Co.,	Shoes,	28	12	–	2	Fair,	Time table to be posted, water closets to be designated, certificates for children, machine shafting to be guarded,	Complied.
E. R. Lothrop & Co.,	Shoe tips,	4	2	–	–	Good,	None,	–
The E. L. Patch Company,	Medical preparations,	23	2	–	–	Good,	Post time tables,	–
STOW.								
C. W. & A. D. Gleason,	Woollen cloths,	53	27	2	4	Fair,	Fly wheel to be guarded, water closets to be designated,	Complied.
SUDBURY.								
Hurlbut & Rogers,	Lathes,	8	–	–	–	Good,	None,	–
TEWKSBURY.								
Atherton Machine Co.,	Cotton machinery,	175	–	–	2	Good,	Elevator openings to be guarded, certificates for children, time tables to be posted,	Complied.
TYNGSBOROUGH.								
J. G. Upton,	Lumber and boxes,	12	2	–	–	Fair,	None,	–
Geo. Danforth,	Lumber and boxes,	14	2	–	–	Good,	None,	–
E. O. Fifield,	Wooden boxes,	7	–	–	–	Good,	None,	–
TOWNSEND.								
U. S. Adams,	Staves,	40	–	–	–	Fair,	None,	–
Townsend Furniture Co.,	Furniture,	20	–	–	1	Good,	Fly-wheel and cut-off gears to be guarded, certificate for child,	Complied.

DISTRICT No. 1 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed				Sanitary Condition	Orders Given.	Compliances
		Males.	Females.	Under 14.	14 to 16.			
Townsend — Concluded.								
Spaulding Bros.,	Leather board and shoe counters,	8	4	–	–	Poor,	Water closets to be provided,	–
Spaulding Bros.,	Leather board,	4	–	–	–	Poor,	None,	–
Clarence Stickney,	Staves and heads,	7	–	–	–	Good,	None,	–
WAKEFIELD.								
Wakefield Rattan Co.,	Rattan ware,	390	160	–	10	Good,	Certificates for children,	Complied.
Thos Emerson's Sons,	Shoes,	70	30	–	1	Good,	Certificate for child,	Complied.
S J Putney,	Heeling shoes,	16	–	–	–	Fair,	None,	–
L. B. Evans' Son,	Women's shoes,	18	2	–	–	Good,	None,	–
Cox & Cheever,	Laundry,	4	16	–	–	Good,	Additional water closet, time table to be posted,	Complied.
Wakefield Reed Chair Co.,	Rattan and reed work,	43	7	–	–	Good,	Fly-wheel and belt to be guarded, time table to be posted,	Complied.
Smith & Anthony Stove Co.,	Stoves and furnaces,	175	–	–	–	Good,	None,	–
L. H. Day,	Shoes,	15	15	–	–	Good,	Elevator opening to be guarded,	Complied.
New England Rattan Co.,	Rattan ware,	20	5	–	–	Good,	Time table to be posted,	Complied.
Citizen & Banner,	Printing,	6	3	–	–	Good,	Separate water closets and designate,	Complied.

City of Waltham.								
Boston Manufacturing Co.,	Cotton cloths and knit underwear,	800	500	2	42	Fair,	Better sanitary provisions, water closets to be designated, certificates for children, and cards for illiterate minors,	Complied.
United States Watch Co.,	Watch movements,	60	40	–	2	–	Certificates for children,	Complied.
Waltham Emery Wheel Co.,	Emery wheels,	30	–	–	–	Poor,	None,	–
American Waltham Watch Co.,	Watches,	1450	1203	–	22	Good,	None,	–
Waltham Steam Laundry,	Laundry,	5	45	–	–	Good,	Post time tables,	Complied.
American Steam Laundry,	Laundry,	7	33	–	–	Good,	Water closets to be designated,	Complied.
American Watch Tool Co.,	Watch tools,	60	5	–	–	Good,	Time table to be posted,	Complied.
Waltham Bleachery & Dye Works,	Bleach'g & dyeing,	230	20	–	–	Good,	None,	–
Parmenter Crayon Co.,	Crayons,	16	2	–	–	Fair,	None,	–
Waltham Watch Tool Co.,	Watch tools,	16	–	–	–	Good,	None,	–
Roberts Paper Mill,	Roofing and asbestos paper,	25	–	–	–	Fair,	None,	–
Wayland.								
W. & J. M. Bent,	Shoes,	375	175	–	10	Good,	Certificates for children,	Complied.
C. W. Dean,	Shoes,	22	3	–	–	Good,	Belt to be guarded, time table to be posted,	Complied.
N. C. Griffin,	Shoes,	13	2	–	–	Fair,	Fly-wheel to be guarded,	Complied.
W. & J. M. Bent, No. 2,	Shoes,	25	15	–	–	Good,	Time table to be posted,	Complied.
Weston.								
Hook & Hastings,	Organs,	75	–	–	–	Good,	None,	–
Wilmington.								
Perry, Converse & Co.,	Leather,	70	–	–	–	Good,	None,	–
Merrimac Chemical Co,	Chemicals,	66	–	–	2	Bad,	Fly-wheels to be guarded, time tables posted, safety device on elevator,	Complied.

DISTRICT No. 1 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
WINCHESTER.								
P. Waldmeyer & Co.,	Sheepskins,	75	–	–	–	Poor,	None,	–
S. C. Small & Co.,	Furniture,	15	–	–	–	Fair,	None,	–
John Maxwell & Co.,	Leather,	125	–	–	–	Good,	Belt knives to be guarded, stairways and elevator openings to be guarded,	Complied.
Loring & Avery,	Leather,	400	–	–	–	Fair,	Safety device on elevator to be repaired,	Complied.
CITY OF WOBURN.								
M. A. Simonds,	Pasted shoe stock,	35	35	1	5	Fair,	Time tables to be posted, certificates for children,	Complied.
James Skinner & Co.,	Leather,	90	–	–	–	Good,	Cut-off gears to be guarded, elevator safety device to be repaired,	Complied.
James Houston,	Leather,	35	–	–	–	Fair,	None,	–
E. Cummings & Co.,	Leather,	130	–	–	–	Good,	None,	–
J. R. Murdock & Co.,	Curriers,	35	–	–	2	Fair,	Fly-wheel to be guarded, elevator well better guarded, certificates for children,	Complied.
J. F. Ramsdell & Co.,	Curriers,	40	–	–	–	Fair,	Fly-wheel to be guarded, belt knives to be covered, safety device for elevator repaired,	Complied.
Bryant & King,	Leather,	80	–	–	–	Good,	None,	–
Wilbur E. Cummings,	Pasted shoe stock,	35	90	–	8	Fair,	Designate water closets, and post time tables,	Complied.

E. C. Cottle & Son,	Curriers,	20	–	–	–	Fair,	Belt knives to be guarded,	Complied.
E. Rollins,	Pasted shoe stock,	14	16	–	–	Good,	Time table to be posted, better guards for elevator openings,	Complied.
Beggs & Cobb,	Leather,	120	–	–	–	Fair,	To guard stairways, fly-wheel and belt knives,	Complied.
Duncan Leather Manuf'g Co.,	Leather,	170	–	–	1	Fair,	Certificate for child,	Complied.
G. W. Nichols,	Shoe stitching,	2	13	–	–	Good,	Time table to be posted,	Complied.
E. L. Shaw & Co.,	Leather,	165	–	–	1	Fair,	Certificate for child,	Complied.
J. B. Crane & Co.,	Curriers,	50	–	–	–	Fair,	None,	–
P. McGowan,	Curriers,	50	–	–	–	Fair,	Fly-wheel and cut-off gears to be guarded, elevator repaired,	Complied.
Geo. A. Simonds & Co.,	Pasted shoe stock,	41	53	–	10	Fair,	Time tables to be posted, fly-wheel to be guarded, certificates for children,	Complied.
D. W. Bond & Co.,	Curriers,	45	–			Fair,	None,	–
J. O. Cummings & Co.,	Curriers,	15	–			Fair,	Belt knives to be guarded,	Complied.
B. F. Kimball & Co.,	Curriers,	35	–			Fair,	None,	–
P. Calnan & Son,	Pasted shoe stock,	15	40		2	Poor,	Time tables to be posted, certificates for children,	Complied.
Kenney & Murphy,	Leather,	40	–			Fair,	Belt knives to be guarded, safety device for elevator, guards for elevator well to be kept closed,	Complied.
E. G. Place & Co.,	Curriers,	20	–	–	–	Good,	None,	–
W. P. Fox & Son,	Curriers,	50	–	–	–	Fair,	None,	–
H. C. Reed & Co.,	Leather,	35	–	–	–	Fair,	Fly-wheel to be guarded,	Complied.
Woburn Steam Laundry,	Laundry,	3	65	–	–	Good,	Fly-wheel to be guarded, time tables posted,	Complied.
J. B. Murray & Co.,	*–	35	25	–	2	Fair,	Certificates for children, water closets to be designated, time tables posted, belt knife guarded, springs on elevator doors,	Complied.

* Curriers and pasted shoe stock.

DISTRICT No. 1 — *Concluded.*

NAME OF FACTORY OR WORKSHOP	Goods Manufactured.	Number Employed				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
City of Woburn — Concluded.								
Stephen Dow & Co.,	Leather,	80	–	–	–	Fair,	None,	–
Russell Counter Co.,	Shoe counters,	60	40	–	6	Good,	Guard set screws, designate water closets,	Complied.

DISTRICT No. 2, ... **JOSEPH HALSTRICK,** *Inspector.*

CITY OF BOSTON.								
Clifton Manufacturing Co.,	Rubber gossamers,	8	42	–	1	Fair,	Post notice of hours of labor,	Complied.
H. G. Collins,	Blank books,	30	10	–	–	Fair,	Post notice of hours of labor, provide water closet,	Complied.
W. S. Best & Co.,	Printing,	15	1	–	1	Fair,	Post notice of hours of labor, certificates for minors,	Complied.
S. K. Abbott & Co.,	Pamphlet binding,	30	120	–	20	Fair,	Certificates for minors,	Complied.
N. F. Connor,	Paper ruling,	5	5	–	–	Fair,	Post notice of hours of labor,	Complied.
E. A. Jones,	Printing,	3	2	–	1	Fair,	Certificates for minors, post notice of hours of labor,	Complied.
Boston Mailing Co.,	Mailing,	15	60	–	–	Good,	Post notice of hours of labor,	Complied.
Rand Avery Supply Co.,	Railroad tickets,	101	20	–	5	Good,	Certificates for minors, post notice of hours of labor,	Complied.
Rand & Avery,	Printing,	80	52	–	–	Good,	None,	–

Frederick Eels,	Bookbinding,	20	24	3	Fair,	Certificates for minors,	Complied.
T. Danahy,	Paper ruling,	5	2		Fair,	Post notice of hours of labor,	Complied.
Hollingsworth & Whitney Co.,	Paper and paper bags,	7	1	1	Good,	None,	–
J. W. Smith and Co.,	Suspenders,	8	12		Good,	Post notice of hours of labor,	Complied.
Nat'l Shoe & Leather Exchange,	Commer'l agency,	5	9		Good,	None,	–
C. F. West,	Paper ruling,	5	7		Fair,	None,	–
George Coleman,	Bookbinding,	10	10	1	Fair,	Post notice of hours of labor,	Complied.
Curtis & Mitchell,	Printers' supplies,	6	2	1	Fair,	Post notice of hours of labor,	Complied.
A. C. Vallee,	Book lettering and gilding,	1	2		Fair,	Post notice of hours of labor,	Complied.
Mills, Knight & Co.,	Leather specialties,	6	23		Fair,	Provide water closet, post notice of hours of labor,	Complied.
E. Nurenberg,	Tailor,	10	20	2	Fair,	Certificates for minors, post notice of hours of labor,	Complied.
Mills, Knight & Co.,	Printing,	27	3		Fair,	Sanitary provisions, post notice of hours of labor,	Complied.
Boston Paper Box Co.,	Paper boxes,	5	32		Fair,	Post notice of hours of labor, sanitary provisions,	Complied
Maine Balsam Fir Co.,	Balsam fir pillows,	5	14	7	Fair,	Certificates for minors, post notice of hours of labor, sanitary provisions,	Complied.
C. A. Pinkham & Co.,	Printing,	27	3		Fair,	Post notice of hours of labor,	Complied.
Hills, Turner & Co.,	Polish'd plate glass,	27	–		Good,	None,	–
A. V. Johnston,	Lamps,	5	15		Fair,	Post notice of hours of labor,	Complied.
John Carter & Co.,	Paper dealers,	24	11		Good,	Post notice of hours of labor,	Complied.
George F. Flick,	Paper boxes,	4	11		Good,	None,	–
S. H. Sanborn,	Bookbinding,	6	14		Good,	None,	–
T. W. Ripley,	Printer,	25	7		Good,	Post notice of hours of labor,	Complied.
J. E. Farwell & Co.,	Printers,	15	5		Good,	None,	–
Perry, Mason & Co.,	Publishers,	40	60		Good,	Post notice of hours of labor,	Complied.

DISTRICT No. 2 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
City of Boston — Continued.								
Walter M. Lowney,	—	50	75	6	22	Good,	None,	—
George V. Jones,	Bookbinding,	8	—	—	—	Good,	None,	—
The Allston Co.,	Patent medicines,	1	5	1	—	Fair,	Certificates for minors, post notice of hours of labor,	Moved.
H. M. Plimpton & Co.,	Bookbinding,	50	50	—	—	Good,	None,	—
Ginn & Co.,	Printing,	18	—	—	—	Good,	None,	—
J. S. Cushing & Co.,	Book printing,	35	35	—	—	Good,	None,	—
Winship, Daniels & Co.,	Printing,	27	3	—	—	Fair,	Provide water closet, post notice of hours of labor,	Complied.
Cox, Gardner & Dorr,	Boots and shoes,	38	12	—	—	Fair,	Post notice of hours of labor,	Complied.
C. A. Lowe & Co.,	Envelopes,	4	10	—	—	Fair,	Post notice of hours of labor,	Complied.
Whitten, Burdett & Young,	Clothing,	75	75	—	—	Good,	Post notice of hours of labor,	Complied.
Mitchell, Woodbury & Co.,	Crockery,	19	1			Good,	Post notice of hours of labor,	Complied.
L. Barta & Co.,	Printers,	38	12			Fair,	None,	—
Farmer Bank Note Co.,	Calendars,	8	4			Good,	Post notice of hours of labor,	Complied.
A. T. Bliss & Co.,	Printing,	14	1		1	Fair,	Certificates for minors, post notice of hours of labor,	Complied.
T. J. Hallisy,	Bookbinding,	2	3	1		Fair,	Post notice of hours of labor, certificates for minors,	Complied.
Elliott Paper Box Co.,	Paper boxes,	10	20	—	—	Fair,	None,	—
Boston Hotel & Steamb't Laundry,	Laundry,	6	18	—	1	Fair,	Provide water closet, post notice of hours of labor, certificates for minors,	Complied.

People's Publishing Co.,	Publishers,	1	7	–	–	Good,	Post notice of hours of labor,	Complied.
H. M. Mason,	Cigars,	10	3	–	–	Fair,	Post notice of hours of labor, sanitary provisions,	Complied
Suffolk Co-operative Association,	Cigars,	6	1	–	–	Good,	Post notice of hours of labor,	Complied.
Boston Type Foundry,	Types,	45	35	–	2	Good,	Certificates for minors,	Complied.
R. H. Farrington,	Clothing,	17	15	–	–	Fair,	None,	–
Messenger Bros. & Jones,	Clothing,	10	15	–	–	Fair,	Sanitary provisions, post notice of hours of labor,	Complied.
Boston Bank Note Co.,	Lithography,	42	8	–	–	Good,	Post notice of hours of labor,	Complied.
E. Fleming & Co.,	Bookbinding,	45	80	–	2	Fair,	Sanitary provisions,	Complied.
George H. Ellis,	Printing,	41	34	–	6	Good,	Certificates for minors, post notice of hours of labor,	Complied.
John A. Lowell & Co.,	Engravers,	50	80	1	6	Good,	Post notice of hours of labor,	Complied.
H. D. Humphreys,	Bookbinding,	6	–	–	1	Good,	Certificates for minors,	Complied.
Fairmount Manufacturing Co.,	Ladies' underwear,	1	147	–	–	Good,	None,	–
F. E. Bacon & Co.,	Printing,	4	6	–	–	Fair,	Post notice of hours of labor,	Complied.
S. J. Parkhill & Co.,	Printing,	36	14	–	1	Good,	None,	–
Bradstreet Mercantile Agency,	Mercantile agency,	40	30	–	3	Good,	None,	–
D. Lothrop Co.,	Publisher,	5	15	–	–	Good,	Post notice of hours of labor,	Complied.
D. Lothrop,	Printing,	10	11	–	–	Fair,	Post notice of hours of labor,	Complied.
Terry Bindery,	Bookbinding,	18	25	–	–	Fair,	Post notice of hours of labor,	Complied.
Alfred Mudge & Son,	Printers,	98	37	–	–	Good,	None,	–
The Mass Title Insurance Co.,	Examination of titles,	12	23	–	–	Good,	None,	–
N. E. Telephone & Telegraph Co.,	N.E. telephone and telegraphy,	23	77	–	–	Good,	None,	–
Brooks, Bonnell & Co.,	Plush and paper boxes,	10	20	–	–	Fair,	Post notice of hours of labor,	Complied.
J. B. & N. Niles,	Printing,	5	1	–	1	Good,	Post notice of hours of labor,	Complied.
E. Hobbs & Co.,	Boot button holes,	–	4	–	–	Good,	Post notice of hours of labor,	Complied.

* Chocolates and bonbons.

DISTRICT No. 2 — *Continued.*

NAME OF FACTORY OR WORKSHOP	Goods Manufactured.	NUMBER EMPLOYED.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
City of Boston — Continued.								
T. O. Metcalf & Co.,	Printers,	15	8	–	1	Good,	Certificates for minors, post notice of hours of labor,	Complied.
Temple Manufacturing Co.,	Hoopskirts and bustles,	–	4	–	–	Fair,	Post notice of hours of labor,	Complied.
James Strachan,	Tailoring,	4	5	–	–	Fair,	Post notice of hours of labor,	Complied.
Coleman & Wollman,	Ladies' tailoring,	2	2	–	–	Fair,	Post notice of hours of labor,	Complied.
Hollander, Bradshaw & Folsom,	Fancy goods,	25	150	3	25	Good,	None,	–
L. P. Hollander & Co.,	Ladies' garments,	50	250	–	10	Good,	Certificates for minors,	Complied.
Emery & Hughes,	Printers,	12	8	–	1	Good,	Post notice of hours of labor, certificates for minors,	Complied.
I. Cohen & Co.,	Tailoring,	13	9	–	–	Fair,	Sanitary provisions, post notice of hours of labor,	Complied.
George Cohen,	Tailoring,	12	33	–	2	Fair,	Certificates for minors, post notice of hours of labor, sanitary provisions,	Complied.
Diatite Company,	Brushes,	13	13	–	2	Fair,	Post notice of hours of labor,	Complied.
S. C. Hervey & Co.,	Confectionery,	4	3	–	–	Fair,	Sanitary provisions, post notice of hours of labor,	Complied.
G. J. Stiles,	Printing,	3	4	–	–	Good,	Post notice of hours of labor,	Complied.
Robinson & Stephenson,	Printing,	16	2	–	–	Good,	Post notice of hours of labor,	Complied.
George H. Pratt & Co.,	Printing and bookbinding,	25	25	–	–	Good,	Post notice of hours of labor,	Complied.
A. Graves,	Leather slippers,	7	23	–	–	Good,	Post notice of hours of labor,	Complied.

Norman & Bennett,	Shoes,	32	8	–	–	Good,	Post notice of hours of labor,	Complied.
W. Richardson,	Printing,	6	4	–	–	Good,	Post notice of hours of labor,	Complied.
Pierce & Son,	Shoes,	120	80	1	14	Fair,	Certificates for minors, post notice of hours of labor,	Complied.
Boston Button Company,	Buttons,	25	175	–	–	Good,	None,	–
C. W. Calkins & Co.,	Printing,	33	2	–	–	Good,	None,	–
Lux Engraving Company,	Printing,	5	–	–	1	Good,	Certificates for minors, post notice of hours of labor,	Complied.
Allen Print,	Printing,	4	2	–	2	Good,	Post notice of hours of labor, certificate for minors,	Complied.
Rumrill & Co.,	Tin boxes,	3	4	–	–	Good,	Post notice of hours of labor,	Complied.
U. B. Campbell,	Tin cans,	22	3	–	–	Fair,	Post notice of hours of labor,	Complied.
John L. Whiting & Sons,	Brushes,	200	125	–	18	Good,	None,	–
W. A. Greenough,	Pub. directory,	3	17	–	–	Fair,	Provide water closet, post notice of hours of labor,	Complied.
S. G. Robinson,	Printing,	7	1	–	–	Good,	Post notice of hours of labor,	Complied.
A. L. Twichell & Co.,	Boot and shoe heels,	19	1	–	–	Good,	None,	–
Thompson & Norris,	Corrugated paper,	13	40	–	–	Good,	None,	–
J. R. Grose,	Paper boxes,	4	8	–	–	Good,	None,	–
John Holmes & Co.,	Underwear,	2	23	–	–	Good,	None,	–
W. U. Lewisson & Co.,	Umbrellas,	7	15	–	–	Good,	Post notice of hours of labor,	Complied.
Kingston Knitting Co.,	Worsted goods,	5	15	–	–	Good,	None,	–
F. D. Whitney & Co.,	Down quilts,	1	7	–	–	Good,	None,	–
Eastern Art Embroidery Works,	Embroidery,	1	7	–	–	Good,	Post notice of hours of labor,	Complied.
T. Y. Crowel & Co.,	Bookbinding,	40	60	–	–	Good,	None,	–
Jordan, Marsh & Co.,	Ladies' underwear,	8	168	–	–	Good,	None,	–
Kammler Brothers,	Shoe and gaiter uppers,	4	2	–	–	Fair,	Post notice of hours of labor,	Complied.
R. Kammler,	Cigars,	4	1	–	–	Fair,	Post notice of hours of labor,	Complied.
A. Bronski & Son,	Tailoring,	5	11	–	1	Fair,	Provide water closet, post notice of hours of labor, certific'tes for minors,	Complied.

DISTRICT No. 2 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
City of Boston — Continued.								
Samuel Stack,	Tailoring,	18	18		1	Fair,	Post notice of hours of labor,	Complied
M. Goldman,	Tailoring,	20	15			Fair,	Post notice of hours of labor, provide water closet,	Complied.
G. G. Allen,	Printing,	3	–		1	Fair,	Certificates for minors, post notice of hours of labor,	Complied.
J. H. Dimer,	Caps,	18	12		1	Fair,	Certificates for minors,	Complied.
F. E. Merriman,	Whalebone,	5	5			Fair,	Post notice of hours of labor,	Complied.
Nichols & Fish,	Cigar boxes,	5	5			Fair,	Post notice of hours of labor, provide water closets,	Complied.
Boot and Shoe Recorder,	Printing,	11	5			Good,	Post notice of hours of labor,	Complied.
L. P. Coffin,	Pamphlet binding,	2	11			Good,	Post notice of hours of labor,	Complied.
A. Peters & Son,	Art embroidery,	15	40		1	Good,	Certificates for minors,	Complied.
Wright & Potter,	Printers,	140	20			Good,	None,	–
Globe Buffer Company,	Sandpaper belts,	12	12			Good,	Post notice of hours of labor,	Complied.
The Lacing Stud Company,	Lacing studs,	9	8			Fair,	Post notice of hours of labor, sanitary provisions,	Complied.
George H. Stevens & Co.,	Boot and shoe shanks,	8	4			Fair,	Post notice of hours of labor, sanitary provisions, certificates for minors,	Complied.
Plymouth Rock Pants Company,	Clothing,	20	16			Good,	Post notice of hours of labor,	Complied.
David Nurenberg,	Tailoring,	45	80		7	Good,	Post notice of hours of labor,	Complied.

C. E. Kennard,	Boot and shoe counters,	4	50	–	4	Good,	Post notice of hours of labor,	Complied.
W. B. White,	Leather cases,	9	20	–	–	Good,	Post notice of hours of labor,	Complied.
Boston Carpet Slipper Co,	Carpet slippers,	15	5	–	–	Good,	None,	–
C. J. Peters & Son,	Electrotyping,	65	20	–	–	Good,	Post notice of hours of labor,	Complied.
Wade Button Company,	Buttons,	4	10	–	–	Good,	None,	–
J. E. Ballou,	Printing,	2	4	–	–	Good,	Sanitary provisions, post notice of hours of labor,	Complied.
Austin & Fellows,	Brushes,	4	12	–	–	Good,	None,	–
Hersey, Damon & Sprague,	Slippers,	21	9	–	–	Good,	None,	–
H. R. Paddock,	Boot and shoe heels,	1	9	–	–	Good,	Post notice of hours of labor,	Complied.
Golding & Co,	Printing,	143	7	–	–	Good,	None,	–
N. E. Fireside Publishing Co.,	Publishers,	5	2	–	–	Good,	Post notice of hours of labor,	Complied.
R. Woodman,	Railroad supplies,	7	–	–	–	Good,	None,	–
Billings, Clapp & Co,	Druggists and chemists,	8	7	–	–	Good,	None,	–
A. Graves,	Slippers,	44	6	–	–	Good,	Post notice of hours of labor,	Complied.
F. H. Gilson,	Music typographer,	20	10	–	1	Good,	Post notice of hours of labor,	Complied.
DeL. Sheplie & Co,	Ladies' straw hats,	50	100	–	–	Good,	None,	–
I. Bash & Son	Cloth hats and caps,	5	6	–	–	Good,	Post notice of hours of labor, sanitary provisions,	Complied.
T. S. Bates & Co.,	Printers,	9	–	–	–	Good,	None,	–
E. L. D. Moffett,	Modiste,	–	8	–	–	Good,	Post notice of hours of labor,	Complied.
Jordan, Marsh & Co., workshops,	Ladies' garments,	4	100	–	2	Good,	Post notice of hours of labor,	Complied.
C. F. Hovey & Co, workshop,	Ladies' and gents' underwear,	15	160	–	–	Good,	None,	–
Dennison Manufacturing Co.,	Tags and cardboard,	155	150	–	17	Good,	None,	–
Union Laundry Co.,	Laundry,	4	5	–	–	Fair,	Sanitary provisions, post notice of hours of labor,	Complied.

DISTRICT NO. 2 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	NUMBER EMPLOYED.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
City of Boston — Continued.								
Pearson Cordage Factory,	Twine,	310	180		25	Good,	None,	–
Globe Nail Co.	Horse-shoe nails,	40	37			Good,	Post notice of hours of labor,	Complied.
New England Piano Co.,	Pianos,	400	60			Good,	Post notice of hours of labor,	Complied.
Boston Piano Co.,	Pianos,	25	–			Good,	None,	–
The E. Howard Watch & Clock Co.,	Watches & clocks,	150	50			Good,	Post notice of hours of labor,	Complied.
G. S Guyer & Co,	Felt hats,	95	40			Fair,	Post notice of hours of labor,	Complied.
Sargent Laundry,	Laundry,	1	35			Fair,	Post notice of hours of labor,	Complied.
City Laundry,	Laundry,	1	44			Fair,	Guard gearing, post notice of hours of labor,	Complied.
Shawmut Laundry,	Laundry,	–	18			Fair,	Post notice of hours of labor,	Complied.
American Hand Laundry,	Laundry,	1	7		1	Good,	Post notice of hours of labor,	Complied.
Griffiths Steam Laundry,	Laundry,	28	65		1	Good,	Post notice of hours of labor,	Complied.
Roxbury Steam Laundry,	Laundry,	1	9			Good,	Post notice of hours of labor,	Complied.
Raymond Skate Co,	Roller skates,	23	2			Good,	Post notice of hours of labor,	Complied.
T. F. Fernald,	Ladies' wear,	1	9			Good,	Post notice of hours of labor,	Complied.
Novelty Brass Co.,	Brass novelties,	4	5			Good,	None,	–
F. P. Adams & Co.,	Flavoring extracts,	5	5			Good,	None,	–
Fiedler, Weinz & Co.,	Silk trimmings,	15	60		4	Good,	Certificates for minors, post notice of hours of labor,	Complied.
Smith Organ Factory,	Organs,	50	–			Good,	None,	–
Emerson Piano Co.,	Pianos,	250	–			Good,	Post notice of hours of labor,	Complied.
Rice & Hutchins,	Shoes,	165	35		4	Good,	Certificates for minors,	Complied.

J. Markowitz,	Tailoring,	13	12	–	–	Bad,	Provide water closets, post notice of hours of labor,	Complied.
Clark & Rosnosky,	Tailoring,	10	25	–	–	Bad,	Provide water closets, post notice of hours of labor,	Complied.
Abrahams & Kalish,	Tailoring,	20	40	–	–	Bad,	Provide water closets, post notice of hours of labor,	Complied.
S. L. Rosnosky,	Tailoring,	4	8	–	–	Fair,	None,	–
Hallett & Davis,	Pianos,	204	6	–	–	Good,	Post notice of hours of labor,	Complied.
H. S. Levy,	Tailoring,	35	40	–	–	Fair,	Certificates for minors, post notice of hours of labor,	Complied.
John B. Babcock,	Straw hats,	15	45	1	–	Good,	Certificates for minors, post notice of hours of labor,	Complied.
Canton Brothers, Bixby & Co.,	Straw hats,	1	26	–	1	Good,	Certificates for minors, post notice of hours of labor,	Complied.
W. S. Barnes,	Paper boxes,	10	[illegible]	–	4	Good,	Certificates for minors, post notice of hours of labor,	Complied.
Boston Clock Co.,	Clocks,	50	12	–	–	Good,	Post notice of hours of labor,	Complied.
M. T. Duval & Son,	Cloaks,	1	3	–	–	Good,	Post notice of hours of labor,	Complied.
Springer Brothers,	Cloaks,	–	12	–	–	Good,	Post notice of hours of labor,	Complied.
D. B. Hatch,	Paper boxes,	1	16	–	1	Good,	None,	–
M. Rosenfield,	Ladies' underwear,	2	28	–	–	Good,	None,	–
Chester Manufacturing Co.,	Suspenders and braces,	–	9	–	–	Good,	Post notice of hours of labor,	Complied.
A. Fox & Co.,	Hats and caps,	5	4	–	–	Bad,	Post notice of hours of labor,	Complied.
Lamson & Hubbard,	Hats and caps,	35	20	–	–	Good,	None,	–
J. H. Callaghan,	Cloaks,	10	50	–	–	Good,	Sanitary provisions, post notice of hours of labor,	Complied.
Spitz Brothers & Mork,	Clothing,	25	15	–	–	Good,	None,	–
Henry A. Turner & Co.,	Furniture,	20	20	–	2	Good,	Certificates for minors, post notice of hours of labor,	Complied.
S. C. Chase & Co.,	Over gaiters,	–	6	–	–	Good,	Post notice of hours of labor,	Complied.

DISTRICT No. 2 — *Continued.*

NAME OF FACTORY OR WORKSHOP	Goods Manufactured.	Numbers Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 18.			
City of Boston — Continued.								
Universalist Publishing House,	Weekly paper,	2	7	–	–	Good,	Post notice of hours of labor,	Complied.
H. Bright & Co.,	Ladies' wrappers,	–	30	–	–	Fair,	Post notice of hours of labor, provide water closets,	Complied.
Tobias & Balcom,	Tailoring,	10	15	–	–	Fair,	Post notice of hours of labor, provide water closets,	Complied.
F. Schwender,	Tailoring,	5	1	–	–	Fair,	Post notice of hours of labor,	Complied.
H. Leonard & Co.,	Surcingles,	1	11	–	–	Good,	Post notice of hours of labor,	Complied.
J. Cutner,	Tailoring,	10	1	–	–	Good,	Post notice of hours of labor,	Complied.
I. Weiss & Co.,	Hats and caps,	16	6	–	–	Fair,	Post notice of hours of labor,	Complied.
L. Snider & Co.,	Tailoring,	6	17	–	–	Good,	Post notice of hours of labor,	Complied.
Jacob J. Baird,	Paper boxes,	6	10	–	–	Good,	None,	–
Springer Brothers,	Cloaks,	20	130	–	–	Good,	None,	–
Freeland, Loomis & Co.,	Clothing,	25	100	–	–	Good,	Post notice of hours of labor,	Complied.
L. Valentine,	Ladies' tailoring,	–	4	–	–	Good,	Post notice of hours of labor,	Complied.
E. G. Horton,	Cloaks,	–	10	–	–	Good,	Post notice of hours of labor,	Complied.
Mrs. T. P. Bascom,	Dressmaking,	–	15	–	–	Good,	Post notice of hours of labor,	Complied.
A. M. & S. M. Ebbett,	Dressmaking,	–	28	–	–	Good,	Post notice of hours of labor,	Complied.
I. D Spitz,	Dressmaking,	1	11	–	–	Good,	Post notice of hours of labor,	Complied.
A. E. Parsons,	Ladies' tailoring,	4	8	–	–	Good,	None,	–
E D Oltmanns,	Tailoring,	2	3	–	–	Good,	Post notice of hours of labor,	Complied.
J. E. Donovan,	Tailoring,	1	14	–	–	Fair,	Post notice of hours of labor,	Complied.
Scacchetti & Co.,	Tailoring,	2	5	–	–	Fair,	Post notice of hours of labor,	Complied.
O. A. Frye,	Sample cards,	3	2	–	–	Fair,	Post notice of hours of labor,	Complied.

C. K. Farrington,	Printing,	5	–	–	–	Fair,	Post notice of hours of labor,	Complied.
Potter & Watson,	Boot and shoe shanks,	30	20	–	–	Fair,	Post notice of hours of labor,	Complied.
N. Wilson & Co.,	Bookbinding,	30	50	–	–	Fair,	Post notice of hours of labor,	Complied.
George Frost & Co.,	Underwear,	20	50	–	–	Good,	Post notice of hours of labor,	Complied.
John H. Pray, Sons & Co.,	Carpets and draperies,	–	35	–	–	Good,	None,	–
D. Wuoti,	Tailoring,	7	8	–	–	Good,	Provide water closet, post notice of hours of labor,	Complied.
D. Roderick,	Machine button holes,	2	2	–	–	Fair,	Post notice of hours of labor,	Complied.
King & Frankstones,	Tailoring,	16	9	–	–	Good,	Sanitary provisions, post notice of hours of labor,	Complied.
C. A. Thomas,	Bleachery,	4	4	–	–	Fair,	Post notice of hours of labor,	Complied.
Standard Bustle Co.,	Coil bustles,	3	17	–	–	Good,	Certificates for minors, post notices of hours of labor,	Complied.
J. D. Scott,	Relief stampers,	1	2	–	–	Good,	Post notice of hours of labor,	Complied.
Cohen & Winkler,	Cloth caps,	4	3	–	–	Good,	Post notice of hours of labor,	Complied.
A. Koerner,	Tailoring,	2	7	–	–	Good,	Post notice of hours of labor,	Complied.
J. Rosenburg,	Cloth caps,	3	2	–	–	Good,	Post notice of hours of labor,	Complied.
Chickering & Sons,	Pianos,	370	5	–	1	Good,	Post notice of hours of labor,	Complied.
L. Gold,	Tailoring,	18	7	–	1	Good,	Certificate for minor, post notice of hours of labor,	Complied.
D. Marks,	Tailoring,	25	10	–	–	Good,	None,	–
R. C. Murray,	Tailoring,	7	1	–	–	Fair,	Post notice of hours of labor,	Complied.
F. P Roberts & Co.,	Hosiery,	12	5	–	3	Good,	Post notice of hours of labor,	Complied.
H. Krikorian,	Confectionery,	10	14	–	2	Good,	Post notice of hours of labor,	Complied.
American Webbing Company,	Narrow goods,	5	25	–	4	Good,	None,	–
C. A Wellington & Co.,	Wood workers,	20	–	–	–	Good,	To keep doors unlocked,	Complied.
A. Gould,	Tailoring,	8	1	–	–	Fair,	Post notice of hours of labor,	Complied.

DISTRICT No. 2 — *Continued.*

NAME OF FACTORY OR WORKSHOP	Goods Manufactured.	Number employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
City of Boston — Continued.								
G. Brooks,	Tailoring,	3	1	–	–	Fair,	Post notice of hours of labor,	Complied.
Margot Brothers,	Watch cases,	19	3	–	–	Good,	Post notice of hours of labor,	Complied.
J. Frederick,	Tailoring,	12	13	–	–	Good,	Post notice of hours of labor,	Complied.
Smith & Porter,	Printing,	22	1	–	–	Good,	Post notice of hours of labor,	Complied.
M. J. Kiley,	Printing,	17	2	–	–	Fair,	Post notice of hours of labor,	Complied.
Hooper, Lewis & Co.,	Bindery,	10	6	–	–	Good,	Post notice of hours of labor,	Complied.
Hook & Hastings,	Church organs,	30	–	–	–	Good,	None,	–
Sewall & Day,	Cordage,	300	200	–	25	Good,	None,	–
Boston Belting Company,	Rubber goods,	350	–	–	–	Good,	Post notice of hours of labor,	Complied.
A. J. Tower,	Oil clothing,	50	250	–	–	Good,	Guard belting, post notice of hours of labor,	Complied.
Roxbury Carpet Company,	Carpets,	275	525	–	50	Good,	None,	–
Phelps & Lombard,	Morocco leather,	25	10	–	–	Good,	None,	–
L. Prang & Co.,	Art publishers,	75	75	–	–	Good,	None,	–
A. Ziegler,	Narrow fabrics,	15	65	–	10	Good,	Post notice of hours of labor,	Complied.
Fiedler, Moeldner & Co.,	Silk trimmings,	20	120	–	2	Good,	None,	–
Randall, Goodale & Co,	Cordage,	20	15	–	–	Good,	None,	–
Columbia Rubber Company,	Rubber clothing,	30	145	–	–	Good,	None,	–
Cable Rubber Company,	Rubber clothing,	20	23	–	–	Good,	Post notice of hours of labor,	Complied.
Ætna Rubber Mills,	Rubber clothing,	28	22	–	–	Good,	None,	–
Lampson & Co,	Hats,	21	9	–	–	Good,	None,	–
Standard Cordage Company,	Cordage,	35	65	–	–	Good,	Post notice of hours of labor,	Complied.
Gossamer Rubber Clothing Co.,	Rubber clothing,	50	150	–	–	Good,	Post notice of hours of labor,	Complied.

Corinne Bustle Company,	Bustles,	1	27	–	–	Fair,	Post notice of hours of labor,	Complied.
Acorn Bustle Company,	Bustles,	1	20	–	–	Fair,	Post notice of hours of labor,	Complied.
A. J. Smallage & Co.,	Ladies' clothing,	15	15	–	–	Fair,	Sanitary provisions, post notice of hours of labor,	Complied.
Hamilton & Tapley,	Slippers,	95	49	–	–	Good,	Post notice of hours of labor,	Complied.
Dwinell, Hayward & Co.,	Coffee and spices,	28	12	–	–	Good,	Post notice of hours of labor,	Complied.
Chase & Sanborn,	Teas and coffee,	32	6	–	–	Good,	Post notice of hours of labor,	Complied.
T. B Bailey,	Perfumers	3	3	–	–	Good,	Post notice of hours of labor,	Complied.
Ira Bradley & Co.,	Bookbinding,	17	16	–	–	Good,	None,	–
C. Nardini,	Tailoring,	4	4	–	–	Fair,	Post notice of hours of labor,	Complied.
J. A. Cummings & Co.,	Printers,	26	4	–	–	Good,	None,	–
J. W Strieder,	Cigar boxes,	13	15	–	3	Good,	Post notice of hours of labor,	Complied.
Bay State Washer Company,	Axle washers,	7	8	–	–	Fair,	Sanitary provisions, post notice of hours of labor,	Complied.
A. Vuoforo,	Tailoring,	15	8	–	–	Good,	Post notice of hours of labor,	Complied.
J. L. Corr & Co.,	Printing,	10	2	–	–	Good,	None,	–
J. L. Fairbanks & Co.,	Bookbinding,	6	8	–	–	Good,	Post notice of hours of labor,	Complied.
W. R Storms & Co.,	Shirts,	–	12	–	–	Good,	Post notice of hours of labor,	Complied.
P. J Slane,	Tailoring,	6	11	–	–	Good,	None,	–
F. Ahearn,	Tailoring,	4	4	–	–	Fair,	None,	–
John Keane,	Tailoring,	2	18	–	–	Fair,	Post notice of hours of labor,	Complied.
Miss H M. Walch,	Vest making,	–	9	–	–	Fair,	Post notice of hours of labor,	Complied.
F. L. Dunne,	Tailoring,	3	11		–	Fair,	None,	–
J. P. Soule,	Photographs,	12	10	–	–	Good,	None,	–
Wilbur & Hovey,	Art novelties,	5	13	–	–	Good,	Post notice of hours of labor,	Complied.
Torrey, Bright & Capen,	Carpets,	40	15	–	–	Good,	None,	–
P. R McCargo & Co.,	Music publisher,	2	3	–	–	Good,	Post notice of hours of labor,	Complied.
Frank Wood,	Printing,	30	10	–	–	Good,	Post notice of hours of labor,	Complied.
Oscar Gowin,	Shirts,	1	7	–	–	Good,	Post notice of hours of labor,	Complied.
Boston Suspender Company,	Suspenders,	4	2	–	–	Good,	None,	–
J. H. Lewis,	Tailoring,	20	44	–	–	Good,	None,	–

DISTRICT No 2 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
City of Boston — Continued.								
D. Connell,	Tailoring,	23	7	–	–	Fair,	Provide water closet, post notice of hours of labor,	Complied.
E. Williams,	Tailoring,	3	18	–	–	Fair,	Provide water closet, post notice of hours of labor,	Complied.
Boston Thread and Twine Co.,	Thread and twine,	47	101	–	17	Good,	None,	
Macullar Parker & Co.,	Clothing,	58	375	–	11	Good,	Post notice of hours of labor,	Complied.
Edward Kakas,	Furrier,	8	25	–	–	Good,	None,	
Slattery Brothers,	Tailoring,	3	9	–	–	Good,	None,	
A. W. Farrington,	Tailoring,	5	2	–	–	Good,	None,	
T. Newton,	Tailoring,	–	7	–	–	Good,	Post notice of hours of labor,	Complied.
Peter Class,	Pocketbooks,	3	3	–	–	Good,	None,	
A. Shuman,	Clothing,	50	100	–	–	Good,	None,	
Central Bonnet Bleachery,	Bleachery,	7	13	–	–	Good,	None,	
Brewer & Stephens,	Tailoring,	5	12	–	–	Fair,	Provide water closet,	Complied.
T. Attner,	Tailoring,	2	12	–	–	Fair,	Provide water closet,	Complied.
W. B. Crocker,	Millinery,	4	46	–	–	Good,	None,	
White, Smith & Co.,	Publishing,	25	10	–	–	Good,	None,	
J. W. Parker & Co.,	Tailoring,	5	30	–	–	Good,	None,	
P. K. Hughes,	Tailoring,	30	40	–	–	Good,	None,	
W. Messing,	Tailoring,	5	15	–	–	Good,	Post notice of hours of labor,	Complied.
N. Hutchins,	Tailoring,	1	7	–	–	Good,	Post notice of hours of labor,	Complied.
Isaac Daniels,	Tailoring,	7	9	–	–	Good,	None,	
Boston Underwear Co.,	Ladies' underwear,	1	39	–	–	Good,	None,	

David Levy,	Tailoring,	15	15	–	Good,	Post notice of hours of labor,	Complied.
H. S. Levy,	Tailoring,	25	25	–	Good,	Post notice of hours of labor,	Complied.
Mrs. A. Atkinson,	Dining-rooms,	10	10	–	Fair,	None,	–
Friedenthal & Holsky,	Tailoring,	13	22	1	Fair,	Certificate for minors, post notice of hours of labor,	Complied.
Geo. E. Hayden,	Costumer,	2	8	–	Good,	None,	–
I. Simonds,	Tailoring,	16	9	–	Fair,	None,	–
L. M. Barron,	Tailoring,	3	32	–	Fair,	Post notice of hours of labor,	Complied.
Frank Whelan,	Pantaloons,	3	30	–	Fair,	Provide water closet, post notice of hours of labor,	Complied.
Rolfe & Pearson,	Tailoring,	9	5	–	Fair,	Provide water closet, post notice of hours of labor,	Complied.
Meagher & Daly,	Tailoring,	3	15	–	Fair,	Provide water closet, post notice of hours of labor,	Complied.
Thomas Todd,	Proprietary medicines,	16	14	–	Fair,	Post notice of hours of labor,	Complied.
Potter Drug & Chem. Corporation,	Proprietary medicines,	16	38	–	Good,	Post notice of hours of labor,	Complied.
Boston Democrat,	Printing,	15	4	–	Fair,	Sanitary provisions, post notice of hours of labor,	Complied.
I. Wilton Hall,	Photo. printing,	4	3	–	Fair,	Sanitary provisions,	Complied.
Bulkeley, Perkins & Shepard,	Cigars,	14	26	–	Good,	Post notice of hours of labor,	Complied.
J. Melendez,	Cigars,	11	1	–	Good,	Post notice of hours of labor,	Complied.
N. Estevez,	Cigars,	5	2	–	Fair,	Post notice of hours of labor,	Complied.
M. Caro,	Cigars,	6	1	–	Good,	Post notice of hours of labor,	Complied.
Mellin's Food,	Food for infants,	26	8	–	Good,	Post notice of hours of labor,	Complied.
Atlantic Paper Box Co.,	Paper boxes,	1	15	–	Good,	Post notice of hours of labor,	Complied.
Stanton & Anderson,	Cigars,	20	10	–	Fair,	Post notice of hours of labor,	Complied.
F. P. Norton,	Cigars,	110	40	–	Good,	Post notice of hours of labor,	Complied.
A. Emerson,	Cotton waste,	5	33	–	Good,	Post notice of hours of labor,	Complied.
T. Remick & Co,	Cotton waste,	8	15	–	Good,	Post notice of hours of labor,	Complied.

DISTRICT No. 2 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
City of Boston — Concluded.								
John T. Lodge & Co.,	Woollen rags,	3	7			Good,	Post notice of hours of labor,	Complied.
W. S. & F. Cordingley,	Woollen rags,	–	10			Good,	Post notice of hours of labor,	Complied.
Foss & Co.,	Woollen stock,	3	10			Fair,	Post notice of hours of labor,	Complied.
J. W. McMahon,	Woollen rags,	3	15			Good,	Post notice of hours of labor,	Complied.
C. Abraham & Sons,	Cigars,	10	4			Fair,	Post notice of hours of labor,	Complied.
G. W. Miller,	Inner soles,	1	7			Fair,	Post notice of hours of labor,	Complied.
E. T Butcher,	Boot & shoe heels,	11	1			Good,	Post notice of hours of labor,	Complied.
A. V. Johnston,	Brass goods,	6	1			Fair,	Post notice of hours of labor,	Complied.
John A. Lowell,	Zylonite printing,	2	1			Good,	Post notice of hours of labor,	Complied.
H. J. Vinal,	Boot & shoe heels,	15	25			Good,	Post notice of hours of labor,	Complied.
The Cigarmakers' Co-operative Association,	Cigars,	43	17		1	Good,	Post notice of hours of labor,	Complied.
Standard Welting Co.,	Shoe welts,	5	–			Good,	Post notice of hours of labor,	Complied.
L. Pickert,	Canned goods,	25	25		1	Good,	Post notice of hours of labor,	Complied.
MARLBOROUGH.								
C. L. & L. F. Frye,	Shoes,	180	45	2	10	Fair,	Post notice of hours of labor, certificates for minors, guard belting, sanitary provisions,	Complied.
Rice & Hutchins,	Shoes,	225	75		13	Good,	Guard belting, guard hatchway, post notice of hours of labor,	Complied.

Commonw'th Shoe & Leather Co.,	Boots and shoes,	130	90			Good,	Post notice of hours of labor,	Complied.
John O'Connor & Son,	Boots and shoes,	100	25		2	Good,	Post notice of hours of labor,	Complied.
The Boyd & Corry Boot & Shoe Manufacturing Co.,	Boots and shoes,	500	150	2	13	Good,	Guard driving belt, certificates for minors, guard shaft to roller,	Complied.
The Gordon Shoe Manufacturers,	Boots and shoes,	70	30		1	Good,	Post notice of hours of labor,	Complied.
Middlesex Shoe Factory,	Shoes,	200	75	1	1	Good,	Guard shafting, post notice of hours of labor,	Complied.
Frank & Duston,	Paper boxes,	10	65	2	5	Good,	Certificates for minors, post notice of hours of labor,	Complied.
J. B. Billings,	Boots and shoes,	90	35		8	Good,	Guard belting to heel compresser,	Complied.
J. F. Desmond,	Shoes,	48	12			Good,	Post notice of hours of labor,	Complied.
Chase, Merritt & Co.,	Boots and shoes,	133	67		5	Good,	Certificates for minors, post notice of hours of labor,	Complied.
Russell & Alley,	Boots and shoes,	80	20		2	Good,	None,	–
T. A. Coolidge,	Shoes,	120	30			Good,	None,	–
Elmer Loring,	Remnant and calf topping,	22	3			Good,	Post notice of hours of labor,	Complied.
S. H. Howe Shoe Co.,	Shoes,	310	55		14	Good,	Certificates for minors, post notice of hours of labor,	Complied.
Marlborough Steam Laundry,	Laundry,	4	16	1	1	Good,	Guard main driving belt, post notice of hours of labor,	Complied.
F.,	Shoes,	155	100		12	Good,	Post notice of hours of labor,	Complied.
John A. Frye,	Boots and shoes,	175	75		4	Good,	None,	–
ASHLAND.								
The Warren Thread Co.,	Spool cotton,	25	75			Good,	Better ventilation on third floor,	Complied.
Houghton, Coolidge & Co.,	Boots and shoes,	420	80		22	Good,	Post notice of hours of labor,	Complied.
Chattanooga Mills,	Satinets,	55	25			Good,	None,	–

DISTRICT No. 2 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
SOUTH FRAMINGHAM.								
South Framingham Tribune,	Publishers,	9	3	–	–	Fair,	Post notice of hours of labor, sanitary provisions,	Complied.
Para Rubber Shoe Co.,	Rubber shoes,	361	450	–	9	Good,	Guard belting,	Complied.
The Framingham Paper Box Co.,	Paper boxes,	15	20	1	5	Fair,	Guard belting, sanitary provisions, post notice of hours of labor,	Complied.
So Framingham Steam Laundry,	Laundry,	6	4	–	–	Fair,	Post notice of hours of labor,	Complied.
T L Barber & Co,	Straw goods,	12	8	–	–	Good,	None,	–
Saxonville Mills,	Worsted,	86	131	3	12	Good,	Guard "self-operating jacks," sanitary provisions, post notice of hours of labor,	Complied.
Bridges & Co.,	Boots and shoes,	325	40	1	8	Good,	Post notice of hours of labor, sanitary provisions,	Complied.
Gossamer Rubber Co,	Gossamer cloth,	30	–	–	–	Good,	Post notice of hours of labor,	Complied.
Staples & Smalley,	Straw goods,	100	200	–	–	Good,	None,	–
A. H. Ordway,	Rattan chairs,	40	1	–	2	Fair,	Post notice of hours of labor,	Complied.
Ashtabula Basket Co.,	Splint baskets,	11	1	–	2	Fair,	Post notice of hours of labor,	Complied.
HOLLISTON.								
John Clancy,	Boots and shoes,	23	2	–	–	Good,	Post notice of hours of labor,	Complied.
Forbes, Wilson & Co,	Boots and shoes,	25	8	–	–	Good,	Post notice of hours of labor,	Complied.
C. J. Driscoll,	Boots and shoes,	39	1	–	–	Good,	None,	–
D. C. Mowry & Co.,	Straw hats,	50	100	–	–	Good,	Post notice of hours of labor,	Complied.
Talbot Tack Factory,	Tacks,	23	2	–	–	Good,	None,	–

SOUTHBOROUGH.							
H. H. Mawhinney & Co.,	Shoes,	250	75	6	10	Good,	Post notice of hours of labor, box shafting, guard hatchway openings, certificates for minors, — Complied.
Cordaville Woollen Co.,	Blankets,	50	50	–	8	Fair,	None, —
G. B. Brigham,	Boots and shoes,	67	8	–	1	Fair,	None, —
NATICK.							
J. O. Wilson & Co.,	Shoes,	315	35	2	–	Good,	Post notice of hours of labor, — Complied.
H. Harwood & Sons,	Base balls,	13	12	–	–	Good,	None, —
J. W. Walcott & Co.,	Boots and shoes,	114	12	–	–	Fair,	Post notice of hours of labor, — Complied.
R. Best & Son,	Shoes,	27	3	–	–	Good,	Post notice of hours of labor, — Complied.
Sheldon Bros.,	Boots and shoes,	10	5	–	–	Good,	Guard shafting, post notice of hours of labor, — Complied.
J. L. Woodman,	Boots and shoes,	58	12	–	–	Good,	None, —
E. Edwards & Son,	Shirts,	2	36	–	–	Good,	Post notice of hours of labor, — Complied.
N. Bartlett & Sons,	Shoes,	35	5	1	–	Good,	None, —
James H. Muhlig,	Shirts,	25	25	–	–	Good,	Guard shafting, post notice of hours of labor, — Complied.
Newell N. Cooper,	Shirts,	23	23	–	–	Good,	Post notice of hours of labor, — Complied.
Richard Hayes & Son,	Boots and shoes,	60	15	–	–	Good,	Guard driving-wheel, guard shafting, post notice of hours of labor, — Complied.
A. I. & G. W. Travis,	Boots and shoes,	33	2	–	–	Good,	Post notice of hours of labor, — Complied.
Riley, Pebbles & Co.,	Boots and shoes,	100	25	–	–	Good,	Post notice of hours of labor, — Complied.
H. H. Brown & Co.,	Boots and shoes,	100	25	–	3	Fair,	None, —
Felch Bros.,	Shoes,	91	12	–	–	Good,	None, —
W. F. Pfeiffer & Co.,	Boots and plough shoes,	42	3	–	–	Good,	Post notice of hours of labor, — Complied.
John Schnider,	Shoes,	6	1	–	–	Good,	None, —
Maltha Manufacturing Co.,	Substitute for rubber,	3	–	–	–	Fair,	None, —

DISTRICT NO. 2 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured	Number Employed				Sanitary Condition	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
City of Boston — Continued.								
Walter M. Lowney,	*–	50	75	6	22	Good,	None,	–
George V. Jones,	Bookbinding,	8	–	–	–	Good,	None,	–
The Allston Co.,	Patent medicines,	1	5	1	–	Fair,	Certificates for minors, post notice of hours of labor,	Moved
H. M. Plimpton & Co.,	Bookbinding,	50	50	–	–	Good,	None,	–
Ginn & Co.,	Printing,	18	–	–	–	Good,	None,	–
J. S. Cushing & Co.,	Book printing,	35	35	–	–	Good,	None,	–
Winship, Daniels & Co.,	Printing,	27	3	–	–	Fair,	Provide water closet, post notice of hours of labor,	Complied.
Cox, Gardner & Dorr,	Boots and shoes,	38	12	–	–	Fair,	Post notice of hours of labor,	Complied.
C. A. Lowe & Co.,	Envelopes,	4	10	–	–	Fair,	Post notice of hours of labor,	Complied.
Whitten, Burdett & Young,	Clothing,	75	75	–	–	Good,	Post notice of hours of labor,	Complied.
Mitchell, Woodbury & Co.,	Crockery,	19	1	1	–	Good,	Post notice of hours of labor,	Complied.
L. Barta & Co.,	Printers,	38	12	–	–	Fair,	None,	–
Farmer Bank Note Co.,	Calendars,	8	4	–	–	Good,	Post notice of hours of labor,	Complied.
A. T. Bliss & Co.,	Printing,	14	1	–	1	Fair,	Certificates for minors, post notice of hours of labor,	Complied.
T. J. Hallisy,	Bookbinding,	2	3	1	–	Fair,	Post notice of hours of labor, certificates for minors,	Complied.
Elliott Paper Box Co.,	Paper boxes,	10	20	–	–	Fair,	None,	–
Boston Hotel & Steamb't Laundry,	Laundry,	6	18	–	1	Fair,	Provide water closet, post notice of hours of labor, certificates for minors,	Complied.

People's Publishing Co.,	Publishers,	1	7	–	–	Good,	Post notice of hours of labor,	Complied.
H. M. Mason,	Cigars,	10	3	–	–	Fair,	Post notice of hours of labor, sanitary provisions,	Complied.
Suffolk Co-operative Association,	Cigars,	6	1	–	–	Good,	Post notice of hours of labor,	Complied.
Boston Type Foundry,	Types,	45	35	–	2	Good,	Certificates for minors,	Complied.
R. H. Farrington,	Clothing,	17	15	–	–	Fair,	None,	–
Messenger Bros. & Jones,	Clothing,	10	15	–	–	Fair,	Sanitary provisions, post notice of hours of labor,	Complied.
Boston Bank Note Co.,	Lithography,	42	8	–	–	Good,	Post notice of hours of labor,	Complied.
E. Fleming & Co.,	Bookbinding,	45	80	–	2	Fair,	Sanitary provisions,	Complied.
George H. Ellis,	Printing,	41	34	–	6	Good,	Certificates for minors, post notice of hours of labor,	Complied.
John A. Lowell & Co.,	Engravers,	50	80	1	6	Good,	Post notice of hours of labor,	Complied.
H. D. Humphreys,	Bookbinding,	6	–	–	1	Good,	Certificates for minors,	Complied.
Fairmount Manufacturing Co.,	Ladies' underwear,	1	147	–	–	Good,	None,	–
F. E. Bacon & Co.,	Printing,	4	6	–	–	Fair,	Post notice of hours of labor,	Complied.
S. J. Parkhill & Co.,	Printing,	36	14	–	1	Good,	None,	–
Bradstreet Mercantile Agency,	Mercantile agency,	40	30	–	3	Good,	None,	–
D. Lothrop Co,	Publisher,	5	15	–	–	Good,	Post notice of hours of labor,	Complied.
D. Lothrop,	Printing,	10	11	–	–	Fair,	Post notice of hours of labor,	Complied.
Terry Bindery,	Bookbinding,	18	25	–	–	Fair,	Post notice of hours of labor,	Complied.
Alfred Mudge & Son,	Printers,	98	37	–	–	Good,	None,	–
The Mass. Title Insurance Co.,	Examination of titles,	12	23	–	–	Good,	None,	–
N. E. Telephone & Telegraph Co.,	N. E. telephone and telegraphy,	23	77	–	–	Good,	None,	–
Brooks, Bonnell & Co.,	Plush and paper boxes,	10	20	–	–	Fair,	Post notice of hours of labor,	Complied.
J. B. & N. Niles,	Printing,	5	1	–	1	Good,	Post notice of hours of labor,	Complied.
E. Hobbs & Co,	Boot button holes,	–	4	–	–	Good,	Post notice of hours of labor,	Complied.

* Chocolates and bonbons.

DISTRICT NO. 2 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
Natick — Concluded.								
C. H. Felch,	Shoes,	25	5	–	–	Good,	Post notice of hours of labor,	Complied.
Geo. H Johnson,	Shirts,	–	6	–	–	Good,	Guard shafting,	Complied.
C. E. Johnson,	Boots and shoes,	80	20	–	2	Good,	Post notice of hours of labor,	Complied.
FRANKLIN.								
Ray Woolen Co.,	Shoddy,	30	5	2	1	Fair,	None,	–
Ray's Cassimere Mills,	Cassimeres,	71	39	–	9	Fair,	None,	–
Chas. J. McKenzie,	Flannels,	28	17	–	–	Fair,	None,	–
Saxon Worsted Co.,	Worsteds,	70	45	2	6	Fair,	None,	–
Franklin Knitting Co.,	Fleece linings,	15	16	–	–	Fair,	None,	–
Boston Rubber Co.,	Rubber boots and shoes,	157	83	–	1	Good,	None,	–
Erickson, Stewart & Thayer,	Straw goods,	35	75	–	–	Fair,	Post notice of hours of labor,	Complied.
Snow, Bassett & Co.,	Straw goods,	100	275	–	–	Good,	None,	–
Waite's Felting Mill,	Felt,	21	2	–	3	Fair,	None,	–
WELLESLEY.								
A. C. Wiswell & Son,	Paper,	12	–	–	–	Fair,	None,	–
Thos. Rice Paper Co.,	Paper,	15	10	–	–	Fair,	Post notice of hours of labor,	Complied.
R. T. Sullivan,	Wool substitutes,	20	20	–	–	Good,	None,	–
C. F. Crehore & Son,	Press paper,	11	1	–	–	Good,	None,	–
W. S. & F. Cordingley,	Shoddy,	17	3	–	1	Good,	None,	–
Dudley Mills,	Knit underwear,	45	85	–	–	Good,	None,	–

NEEDHAM.								
Alexander Lynes,	Woollens,	10	30	–	–	Good,	None,	–
William Toone & Co.,	Knit goods,	7	3	–	–	Good,	None,	–
Wm. Carter & Co.,	Knit goods,	15	25	–	6	Good,	Guard shafting,	Complied.
Moseley & Co,	Knit goods,	12	24	–	1	Good,	None,	–
Springfield Bicycle Co.,	Bicycles,	100	–	–	–	Good,	None,	–
MILFORD.								
L. F. Quiggle & Co.,	Shoes,	34	6	–	–	Good,	None,	–
Claflin & Thayer,	Boots and shoes,	94	6	–	–	Good,	None,	–
James S. Kelly,	Shoes,	30	10	–	–	Good,	None,	–
Lilley & Co.,	Needles,	4	6	–	–	Good,	None,	–
Colburn, Fuller & Co.,	Shoes,	280	120	–	–	Good,	None,	–
Eastman & Hobart,	Paper boxes,	5	20	–	–	Good,	None,	–
Milford Shoe Co.,	Shoes,	225	75	–	13	Good,	None,	–
Eben Brown,	Needles,	3	1	–	–	Fair,	Post notice of hours of labor,	Complied.
Wm. B Hale,	Cigars,	10	4	–	–	Fair,	Post notice of hours of labor,	Complied.
Nolan Bros.,	Cigars,	13	2	–	–	Good,	Post notice of hours of labor,	Complied.
Greene Bros.,	Heels,	44	86	–	15	Good,	Certificates for minors,	Complied.
HOPEDALE.								
Hopdale Elastic Fabric Co,	Elastic fabrics,	30	70	–	3	Good,	Certificates for minors, post notice of hours of labor,	Complied.
The Dutcher Temple Co,	Loom temples,	45	5	–	–	Good,	None,	–
HOPKINTON.								
G. & F. W. Wood,	Boots and shoes,	110	15	–	1	Good,	None,	–
S. & A. Crooks & Co,	Boots and shoes,	300	100	3	19	Good,	None,	–
E. Thompson & Co,	Boots and shoes,	105	20	–	5	Good,	None,	–
A. Coburn,	Boots and shoes,	250	50	–	–	Good,	None,	–

DISTRICT No. 2 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
City of Boston — Continued.								
Samuel Stack,	Tailoring,	18	18	–	1	Fair,	Post notice of hours of labor,	Complied
M. Goldman,	Tailoring,	20	16	–	–	Fair,	Post notice of hours of labor, provide water closet,	Complied.
G. G. Allen,	Printing,	3	–	–	1	Fair,	Certificates for minors, post notice of hours of labor,	Complied.
I. H. Dinner,	Caps,	18	12	–	1	Fair,	Certificates for minors,	Complied.
F. E. Merriman,	Whalebone,	5	5	–	–	Fair,	Post notice of hours of labor,	Complied.
Nichols & Fish,	Cigar boxes,	5	5	–	–	Fair,	Post notice of hours of labor, provide water closets,	Complied.
Boot and Shoe Recorder,	Printing,	11	5	–	–	Good,	Post notice of hours of labor,	Complied.
L. P. Coffin,	Pamphlet binding,	2	11	–	–	Good,	Post notice of hours of labor,	Complied.
A. Peters & Son,	Art embroidery,	15	40	–	1	Good,	Certificates for minors,	Complied.
Wright & Potter,	Printers,	140	20	–	–	Good,	None,	–
Globe Buffer Company,	Sandpaper belts,	12	12	–	–	Good,	Post notice of hours of labor,	Complied.
The Lacing Stud Company,	Lacing studs,	9	8	–	–	Fair,	Post notice of hours of labor, sanitary provisions,	Complied.
George H. Stevens & Co.,	Boot and shoe shanks,	8	4	–	1	Fair,	Post notice of hours of labor, sanitary provisions, certificates for minors,	Complied.
Plymouth Rock Pants Company,	Clothing,	20	16	–	–	Good,	Post notice of hours of labor,	Complied.
David Nurenberg,	Tailoring,	45	80	–	7	Good,	Post notice of hours of labor,	Complied.

C. E. Kennard,	Boot and shoe counters,	4	50	–	4	Good,	Post notice of hours of labor,	Complied.
W. B. White,	Leather cases,	9	20	–	–	Good,	Post notice of hours of labor,	Complied.
Boston Carpet Slipper Co,	Carpet slippers,	15	5	–	–	Good,	None,	–
C. J. Peters & Son,	Electrotyping,	65	20	–	–	Good,	Post notice of hours of labor,	Complied.
Wade Button Company,	Buttons,	4	10	–	–	Good,	None,	–
J. E. Ballou,	Printing,	2	4	–	–	Good,	Sanitary provisions, post notice of hours of labor,	Complied.
Austin & Fellows,	Brushes,	4	12	–	–	Good,	None,	–
Hersey, Damon & Sprague,	Slippers,	21	9	–	–	Good,	None,	–
H. R. Paddock,	Boot and shoe heels,	1	9	–	–	Good,	Post notice of hours of labor,	Complied.
Golding & Co,	Printing,	143	7	–	–	Good,	None,	–
N. E Fireside Publishing Co.,	Publishers,	5	2	–	–	Good,	Post notice of hours of labor,	Complied.
R. Woodman,	Railroad supplies,	7	–	–	–	Good,	None,	–
Billings, Clapp & Co,	Druggists and chemists,	8	7	–	–	Good,	None,	–
A. Graves,	Slippers,	44	6	–	–	Good,	Post notice of hours of labor,	Complied.
F. H. Gilson,	Music typographer,	20	10	–	1	Good,	Post notice of hours of labor,	Complied.
DeL. Sheplie & Co,	Ladies' straw hats,	50	100	–	–	Good,	None,	–
I. Bash & Son	Cloth hats and caps,	5	6	–	–	Good,	Post notice of hours of labor, sanitary provisions,	Complied.
T. S. Bates & Co.,	Printers,	9	–	–	–	Good,	None,	–
E. L. D. Moffett,	Modiste,	–	8	–	–	Good,	Post notice of hours of labor,	Complied.
Jordan, Marsh & Co., workshops,	Ladies' garments,	4	100	–	2	Good,	Post notice of hours of labor,	Complied.
C. F. Hovey & Co., workshop,	Ladies' and gents' underwear,	15	160	–	–	Good,	None,	–
Dennison Manufacturing Co.,	Tags and cardboard,	155	150	–	17	Good,	None,	–
Union Laundry Co.,	Laundry,	4	5	–	–	Fair,	Sanitary provisions, post notice of hours of labor,	Complied.

DISTRICT No. 2 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
City of Boston — Concluded.								
John T. Lodge & Co.,	Woollen rags,	3	7	–	–	Good,	Post notice of hours of labor,	Complied.
W. S. & F. Cordingley,	Woollen rags,	–	10	–	–	Good,	Post notice of hours of labor,	Complied.
Foss & Co.,	Woollen stock,	3	10	–	–	Fair,	Post notice of hours of labor,	Complied.
J. W. McMahon,	Woollen rags,	3	15	–	–	Good,	Post notice of hours of labor,	Complied.
C. Abraham & Sons,	Cigars,	10	4	–	–	Fair,	Post notice of hours of labor,	Complied.
G. W. Miller,	Inner soles,	1	7	–	–	Fair,	Post notice of hours of labor,	Complied.
E. T. Butcher,	Boot & shoe heels,	11	1	–	–	Good,	Post notice of hours of labor,	Complied.
A. V. Johnston,	Brass goods,	6	1	–	–	Fair,	Post notice of hours of labor,	Complied.
John A. Lowell,	Zylonite printing,	2	1	–	–	Good,	Post notice of hours of labor,	Complied.
H. J. Vinal,	Boot & shoe heels,	15	25	–	–	Good,	Post notice of hours of labor,	Complied.
The Cigarmakers' Co-operative Association,	Cigars,	43	17	–	1	Good,	Post notice of hours of labor,	Complied.
Standard Welting Co.,	Shoe welts,	5	–	–	–	Good,	Post notice of hours of labor,	Complied.
L. Pickert,	Canned goods,	25	25	–	1	Good,	Post notice of hours of labor,	Complied.
MARLBOROUGH.								
C. L. & L. F. Frye,	Shoes,	130	45	2	10	Fair,	Post notice of hours of labor, certificates for minors, guard belting, sanitary provisions,	Complied.
Rice & Hutchins,	Shoes,	225	75	–	13	Good,	Guard belting, guard hatchway, post notice of hours of labor,	Complied.

Commonw'th Shoe & Leather Co.,	Boots and shoes,	190	90	–	–	Good,	Post notice of hours of labor,	Complied.
John O'Connor & Son,	Boots and shoes,	100	25	–	2	Good,	Post notice of hours of labor,	Complied.
The Boyd & Corry Boot & Shoe Manufacturing Co.,	Boots and shoes,	500	150	2	13	Good,	Guard driving belt, certificates for minors, guard shaft to roller,	Complied.
The Gordon Shoe Manufacturers,	Boots and shoes,	70	30	–	1	Good,	Post notice of hours of labor	Complied.
Middlesex Shoe Factory,	Shoes,	200	75	1	1	Good,	Guard shafting, post notice of hours of labor,	Complied.
Frank & Duston,	Paper boxes,	10	65	2	5	Good,	Certificates for minors, post notice of hours of labor,	Complied.
J. B. Billings,	Boots and shoes,	90	35	–	8	Good,	Guard belting to heel compresser,	Complied.
J. F. Desmond,	Shoes,	48	12	–	–	Good,	Post notice of hours of labor,	Complied.
Chase, Merritt & Co.,	Boots and shoes,	133	67	–	5	Good,	Certificates for minors, post notice of hours of labor,	Complied.
Russell & Alley,	Boots and shoes,	80	20	–	2	Good,	None,	–
T. A. Coolidge,	Shoes,	120	30	–	–	Good,	None,	–
Elmer Loring	Remnant and calf topping,	22	3	–	–	Good,	Post notice of hours of labor,	Complied.
S. H. Howe Shoe Co.,	Shoes,	310	55	–	14	Good,	Certificates for minors, post notice of hours of labor,	Complied.
Marlborough Steam Laundry,	Laundry,	4	16	1	1	Good,	Guard main driving belt, post notice of hours of labor,	Complied.
F.,	Shoes,	155	100	–	12	Good,	Post notice of hours of labor,	Complied.
John A. Frye,	Boots and shoes,	175	75	–	4	Good,	None,	–
ASHLAND.								
The Warren Thread Co.,	Spool cotton,	25	75	–	–	Good,	Better ventilation on third floor,	Complied.
Houghton, Coolidge & Co.,	Boots and shoes,	420	80	–	22	Good,	Post notice of hours of labor,	Complied.
Chattanooga Mills,	Satinets,	55	25	–	–	Good,	None,	–

DISTRICT No. 2 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	NUMBER EMPLOYED.				Sanitary Condition.	Orders Given.	Compliance.
		Males.	Females.	Under 14.	14 to 16.			
SOUTH FRAMINGHAM.								
South Framingham Tribune,	Publishers,	9	3	–	–	Fair,	Post notice of hours of labor, sanitary provisions,	Complied.
Para Rubber Shoe Co.,	Rubber shoes,	361	450	–	9	Good,	Guard belting,	Complied.
The Framingham Paper Box Co.,	Paper boxes,	15	20	1	5	Fair,	Guard belting, sanitary provisions, post notice of hours of labor,	Complied.
So. Framingham Steam Laundry,	Laundry,	6	4	–	–	Fair,	Post notice of hours of labor,	Complied.
T. L. Barber & Co.,	Straw goods,	12	8	–	–	Good,	None,	–
Saxonville Mills,	Worsted,	86	131	3	12	Good,	Guard "self-operating jacks," sanitary provisions, post notice of hours of labor,	Complied.
Bridges & Co.,	Boots and shoes,	325	40	1	8	Good,	Post notice of hours of labor, sanitary provisions,	Complied.
Gossamer Rubber Co.,	Gossamer cloth,	30	–	–	–	Good,	Post notice of hours of labor,	Complied.
Staples & Smalley,	Straw goods,	100	200	–	–	Good,	None,	–
A. H. Ordway,	Rattan chairs,	40	1	–	2	Fair,	Post notice of hours of labor,	Complied.
Ashtabula Basket Co.,	Splint baskets,	11	1	–	2	Fair,	Post notice of hours of labor,	Complied.
HOLLISTON.								
John Clancy,	Boots and shoes,	23	2	–	–	Good,	Post notice of hours of labor,	Complied.
Forbes, Wilson & Co.,	Boots and shoes,	25	3	–	–	Good,	Post notice of hours of labor,	Complied.
C. J. Driscoll,	Boots and shoes,	39	1	–	–	Good,	None,	–
D. C. Mowry & Co.,	Straw hats,	50	100	–	–	Good,	Post notice of hours of labor,	Complied.
Talbot Tack Factory,	Tacks,	23	2	–	–	Good,	None,	–

Southborough.							
H. H. Mawhinney & Co.,	Shoes,	250	75	6	10	Good,	Post notice of hours of labor, box shafting, guard hatchway openings, certificates for minors,	Complied.
Cordaville Woollen Co.,	Blankets,	50	50	–	8	Fair,	None,	–
G. B. Brigham,	Boots and shoes,	67	8	–	1	Fair,	None,	–
Natick.								
J. O. Wilson & Co.,	Shoes,	315	35	2	–	Good,	Post notice of hours of labor,	Complied.
H. Harwood & Sons,	Base balls,	13	12	–	–	Good,	None,	–
J. W. Walcott & Co.,	Boots and shoes,	114	12	–	–	Fair,	Post notice of hours of labor,	Complied.
R. Best & Son,	Shoes,	27	3	–	–	Good,	Post notice of hours of labor,	Complied.
Sheldon Bros.,	Boots and shoes,	10	5	–	–	Good,	Guard shafting, post notice of hours of labor,	Complied.
J. L. Woodman,	Boots and shoes,	58	12	–	–	Good,	None,	–
E. Edwards & Son,	Shirts,	2	36	–	–	Good,	Post notice of hours of labor,	Complied.
N. Bartlett & Sons,	Shoes,	35	5	1	–	Good,	None,	–
James H. Muhlig,	Shirts,	25	25	–	–	Good,	Guard shafting, post notice of hours of labor,	Complied.
Newell N. Cooper,	Shirts,	23	23	–	–	Good,	Post notice of hours of labor,	Complied.
Richard Hayes & Son,	Boots and shoes,	60	15	–	–	Good,	Guard driving-wheel, guard shafting, post notice of hours of labor,	Complied.
A. I. & G. W. Travis,	Boots and shoes,	33	2	–	–	Good,	Post notice of hours of labor,	Complied.
Riley, Pebbles & Co.,	Boots and shoes,	100	25	–	–	Good,	Post notice of hours of labor,	Complied.
H. H. Brown & Co.,	Boots and shoes,	100	25	–	3	Fair,	None,	–
Felch Bros.,	Shoes,	91	12	–	–	Good,	None,	–
W. F. Pfeiffer & Co.,	Boots and plough shoes,	42	3	–	–	Good,	Post notice of hours of labor,	Complied.
John Schnider,	Shoes,	6	1	–	–	Good,	None,	–
Maltha Manufacturing Co.,	Substitute for rubber,	3	–	–	–	Fair,	None,	–

DISTRICT NO. 2 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	NUMBER EMPLOYED				Sanitary Condition.	Orders Given.	Compliance
		Males.	Females.	Under 14.	14 to 16.			
Natick — Concluded.								
C. H. Felch,	Shoes,	25	5		–	Good,	Post notice of hours of labor,	Complied.
Geo. H. Johnson,	Shirts,	–	6		–	Good,	Guard shafting,	Complied.
C. E. Johnson,	Boots and shoes,	80	20		2	Good,	Post notice of hours of labor,	Complied.
FRANKLIN.								
Ray Woolen Co.,	Shoddy,	30	5	2	1	Fair,	None,	–
Ray's Cassimere Mills,	Cassimeres,	71	39		9	Fair,	None,	–
Chas. J. McKenzie,	Flannels,	28	17			Fair,	None,	–
Saxon Worsted Co.,	Worsteds,	70	45	2	6	Fair,	None,	–
Franklin Knitting Co.,	Fleece linings,	15	16			Fair,	None,	–
Boston Rubber Co.,	Rubber boots and shoes,	157	83		1	Good,	None,	–
Erickson, Stewart & Thayer,	Straw goods,	35	75			Fair,	Post notice of hours of labor,	Complied.
Snow, Bassett & Co.,	Straw goods,	100	275			Good,	None,	–
Waite's Felting Mill,	Felt,	21	2		3	Fair,	None,	–
WELLESLEY.								
A. C. Wiswell & Son,	Paper,	12	–			Fair,	None,	–
Thos. Rice Paper Co.,	Paper,	15	10			Fair,	Post notice of hours of labor,	Complied.
R. T. Sullivan,	Wool substitutes,	20	20		–	Good,	None,	–
C. F. Crehore & Son,	Press paper,	11	1		–	Good,	None,	–
W. S. & F. Cordingley,	Shoddy,	17	3		1	Good,	None,	–
Dudley Mills,	Knit underwear,	45	85		–	Good,	None,	–

Needham.								
Alexander Lynes,	Woollens,	10	30	–	–	Good,	None,	–
William Toone & Co.,	Knit goods,	7	3	–	–	Good,	None,	–
Wm. Carter & Co.,	Knit goods,	15	25	–	6	Good,	Guard shafting,	Complied.
Moseley & Co.,	Knit goods,	12	24	–	1	Good,	None,	–
Springfield Bicycle Co.,	Bicycles,	100	–	–	–	Good,	None,	–
Milford.								
L. F. Quiggle & Co.,	Shoes,	34	6	–	–	Good,	None,	–
Claflin & Thayer,	Boots and shoes,	94	6	–	–	Good,	None,	–
James S. Kelly,	Shoes,	30	10	–	–	Good,	None,	–
Lilley & Co.,	Needles,	4	6	–	–	Good,	None,	–
Colburn, Fuller & Co.,	Shoes,	280	120	–	–	Good,	None,	–
Eastman & Hobart,	Paper boxes,	5	20	–	–	Good,	None,	–
Milford Shoe Co.,	Shoes,	225	75	–	13	Good,	None,	–
Eben Brown,	Needles,	3	1	–	–	Fair,	Post notice of hours of labor,	Complied.
Wm. B Hale,	Cigars,	10	4	–	–	Fair,	Post notice of hours of labor,	Complied.
Nolan Bros.,	Cigars,	13	2	–	–	Good,	Post notice of hours of labor,	Complied.
Greene Bros.,	Heels,	44	86	–	15	Good,	Certificates for minors,	Complied.
Hopedale.								
Hopdale Elastic Fabric Co.,	Elastic fabrics,	30	70	–	8	Good,	Certificates for minors, post notice of hours of labor,	Complied.
The Dutcher Temple Co.,	Loom temples,	45	5	–	–	Good,	None,	–
Hopkinton.								
G. & F. W. Wood,	Boots and shoes,	110	15	–	1	Good,	None,	–
S. & A. Crooks & Co.,	Boots and shoes,	300	100	3	19	Good,	None,	–
E. Thompson & Co.,	Boots and shoes,	105	20	–	5	Good,	None,	–
A. Coburn,	Boots and shoes,	250	50	–	–	Good,	None,	–

DISTRICT No. 2 — *Concluded.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
MENDON.								
Whiting Shoddy Mills, . .	Shoddy, . .	5	–	–	–	Good, .	None, ...	–
MEDWAY.								
Sanford Woollen Co., . . .	Cassimeres, . .	47	13			Good, .	Guard driving belt and engine, .	Complied.
Spencer and Co., ...	Paper boxes, .	2	11			Fair, .	Post notice of hours of labor, sanitary provisions, ...	Complied.
N. E. Awl and Needle Co., . .	Awls and needles,	15	15			Good, .	None, ...	– –
Leander S. Daniels, . . .	Boots and shoes, .	170	15	1	2	Good, .	None, ...	– –
A. M. Smith, ...	Boots and shoes, .	142	8			Good, .	None, ...	– –
Hubley Paper Co., . . .	Paper, . . .	11	1			Fair, .	None, ...	– –
Medway Boot and Shoe Co., .	Boots and shoes, .	200	50	1	4	Good, .	Certificates for minors, post notice of hours of labor, ...	Complied.
Hirsh & Park, ...	Straw and felt goods, . .	55	15			Good, .	Post notice of hours of labor, . .	Complied.
J. W. Thompson, ...	Boots and shoes, .	95	30			Good, .	None, ...	– –
S. G. Clark, ...	Paper boxes, .	6	1			Fair, .	None, ...	– –
BELLINGHAM.								
Ray's Woollen Co., . . .	Satinets, . .	64	46		6	Good, .	None, ...	– –
Taft, McKean & Co., . . .	Satinets, . .	65	40			Good, .	None, ...	– –

Millis.								
A. L. Ware,	Organ pipes,	6	–	–	–	Good,	None,	–
E. L. Holbrook,	Pipe organs,	4	–	–	–	Good,	None,	–
Baltimore Paper Mills,	Paper,	6	1	–	–	Bad,	Guard gearing and fly-wheel,	–
P. A. Waite,	Felting,	14	–	–	–	Good,	None,	–

DISTRICT No. 8, ... **Isaac S. Mullen,** *Inspector.*

City of Boston.								
Richard T. Fellows,	Prepared horse radish,	1	2	–	–	Fair,	Additional water closets,	Complied.
Willis Glasgow,	Barber shop,	3	–	–	–	Fair,	Additional water closets,	Complied.
Green & Conley,	Plumber's shop,	3	–	–	–	Fair,	Additional water closets,	Complied.
W. Moorgofski,	Cigars,	3	2	–	–	Fair,	Additional water closets,	Complied.
F. H. Thorndike,	Bar room,	3	–	–	–	Fair,	Additional water closets,	Complied.
Boston Plating Co.,	Nickel plating,	4	–	–	–	Fair,	Additional water closets,	Complied.
J. W. Colgan,	Harness ornam'ts,	4	–	–	–	Fair,	Additional water closet,	Complied.
A. Harris,	Clothing,	15	25	–	3	Fair,	Additional water closet,	Complied.
M. Schwartz,	Clothing,	5	–	–	–	Fair,	Additional water closet,	Complied.
Waitt & Bond,	Cigars,	95	45	–	–	Fair,	Additional water closet,	Complied.
S. Gryzmish,	Cigars,	11	3	–	–	Fair,	Additional water closet,	Complied.
Waitt & Bond,	Cigars,	18	30	–	–	Fair,	Additional water closet,	Complied.
Kimball & Co.,	Egg-beaters,	10	3	–	–	Fair,	Additional water closet,	Complied.
Pulison Telephone Co,	Telephones,	12	–	–	–	Fair,	Better sanitary arrangements,	Complied.
E. R. Hill,	Type-setting,	1	6	–	–	Fair,	Additional water closet,	Complied.
Boston Can Co,	Tin cans,	40	10	–	–	Fair,	Guard machinery,	Complied.
Sewell & Day Cordage Co.,	Cordage,	170	80	–	–	Good,	None,	–
Belvedere Manufacturing Co.,	Shoe linings,	5	1	–	3	Fair,	None,	–
H. M. Davis,	Steam laundry,	4	2	–	–	Fair,	None,	–

DISTRICT No. 3 — *Concluded.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
City of Boston — Continued.								
C. H. Cadieu,	Die sinker,	12	–	–	–	Fair,	Better sanitary arrangements,	Complied.
Wm. Hall,	Manuf locks,	15	–	–	–	Fair,	None,	–
Henry Rose,	Clothing,	1	3	–	–	Fair,	None,	–
Boston Dyewood Co.,	Dyes & chemicals,	110	–	–	–	Good,	None,	–
Potter & Wrightington,	Fish packers,	20	35	–	–	Good,	None,	–
Heywood Bros. & Co.,	Chair finishers,	12	–	–	–	Good,	None,	–

DISTRICT No. 4, ... **EDWIN Y. BROWN, *Inspector.***

CITY OF BOSTON.								
Putnam & Co,	Bedding,	20	20	1	2	Good,	To post notices of working hours, separate water closets, and certificates for three children,	Complied.
Chase & Co.,	Confectionery,	100	100	–	4	Good,	To post notices of working hours, and certificates for three children,	Complied.
Hauthaway & Son,	Shoe blacking,	8	12	–	–	Fair,	To post notice of working hours, and designate water closets,	Complied.
Barlow & Hamburger,	Paper stock,	10	40	–	–	Fair,	To post notices of working hours, and designate water closets,	Complied.
Consolidated Electric Mfg. Co.,	Electric apparatus,	32	–	–	–	Good,	None,	–

A. E. Towne,	Leather board shoe counters,	33	12	–	–	Good,	To post notices of working hours,	Complied.
A. E. Kendrick,	Leather board shoe counters,	15	15	–	1	Good,	To post notice of working hours, and certificate for one child,	Complied.
American Steel Car Wheel Works,	Steel car wheels,	35	–	–	–	Fair,	To guard fly-wheels,	Complied.
Bernstein Electric Co,	Incandes'nt lamps and fittings,	55	25	–	2	Good,	To post notices of working hours, and certificates for two children,	Complied.
Suffolk Manufacturing Co,	Suspenders,	35	115	–	–	Good,	Certificates for two children,	Complied.
Hersey Brothers,	Machinery,	50	–	–	–	Good,	None,	–
Tyler Tube Works,	Boiler tubes,	50	–	–	–	Good,	None,	–
Bay State Adamant Co,	Adamant wall plaster,	12	–	–	1	Fair,	None,	–
Brooklyn Cooperage Co.,	Sugar barrels,	90	–	–	–	Fair,	None,	–
Walworth Manufacturing Co.,	Steam and gas fittings,	400	–	–	5	Fair,	Certificates for five children,	Complied.
Robert Bishop,	Carpet lining, cotton wadding and waste,	50	75	–	–	–	Fly-wheel and crank guarded, designate water closets, and post notice of working hours,	Complied.
Adams Brothers,	Baling cotton and waste,	7	7	–	–	Poor,	To provide separate water closets,	Complied.
Smith, Carleton Iron Co.,	Machine work and forging,	25	–	–	–	Good,	To guard fly-wheel,	Complied.
Lawrence H. Daloz,	Steam cleansing and dyeing,	5	9	–	–	Good,	None,	–
Compressed Steel Shafting Works,	Steel shafting,	18	–	–	–	Good,	None,	–
Orrin M. Whitman,	Butter coolers,	9	–	–	–	Good,	None,	–
Henry I. Lathrop & Co.,	Wire ferrules,	17	–	–	2	Good,	Certificates for two children,	Complied.
Boston Cordage Co,	Cordage and twine,	220	200	–	–	Good,	None,	–

DISTRICT No. 4 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	NUMBER EMPLOYED.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
City of Boston — Continued.								
Soloman A. Woods Machine Co.,	Planing & moulding machines,	160	–	–	–	Good,	None,	–
A Hale & Co Rubber Mfg.,	Rubber goods,	12	–	–	–	Good,	None,	–
Putnam Nail Co.,	Horse-shoe nails,	184	94	–	–	Good,	None,	–
The Metis Wrought Iron Casting Co.,	Wrought iron and steel castings,	30	–	–	–	Fair,	None,	
A. T Stearns Lumber Co.,	Doors, window-frames, mouldings, etc.,	75	–	–	–	Fair,	None,	–
Darius Eddy & Son,	Refrigerators,	50	–	–	–	Fair,	None,	–
Walter Baker & Co.,	Chocolate,	175	145	–	–	Good,	None,	–
M. W. Cain & Co.,	Office furniture,	40	–	–	–	Fair,	None,	–
Henry B. Simpson,	Refrigerators,	15	–	–	–	Fair,	None,	–
Eagle Paper Mill,	Book paper,	43	23	–	–	Fair,	None,	–
McKendry & Bird,	Morocco,	7	–	–	–	Fair,	None,	–
C. M. Holmes,	Leather jackets & wigwam slip'ers,	43	27	–	–	Fair,	None,	–
Dorchester Manufacturing Co.,	Chamber furniture,	25	–	–	–	Fair,	None,	–
McNeil Brothers,	House finishings, mouldings, etc.,	75	–	–	–	Fair,	None,	–
Davidson Rubber Co.,	Rubber goods,	79	44	–	–	Fair,	To designate water closets,	Complied.

New England Preserving Co.,	Preserves & jellies,	20	20	–	–	Fair,	None,	–
Hatch & Margeson,	Hand-sewed wigwam slippers,	25	–	–	–	Fair,	None,	–
Stickney & Poor,	Spices, extracts, mustard, etc.	45	26	–	–	Fair,	None,	–
C. B. Goodrich & Co.,	Crackers and biscuits,	22	10	–	–	Fair,	To designate water closets,	Complied.
Howard Manufacturing Co.,	Elastic webbing, yarns, and razor strops,	35	194	–	22	Good,	None,	–
Hodges, Mansur & Co.,	Crackers and biscuits,	44	26	–	–	Fair,	None,	–
Phila. and Boston Face Brick Co.,	Face and ornamental brick,	60	–	–	–	Fair,	None,	–
Crosby Steam Gage and Valve Co.,	Steam gages and valves,	107	–	–	–	Fair,	None,	–
Barrett & Brothers,	Dye house,	40	60	–	–	Fair,	None,	–
Waverly Magazine,	Newspaper,	5	10	–	–	Good,	None,	–
Cunningham Iron Works,	Steam boilers,	60	–	–	–	Fair,	None,	–
Boston Wadding & Waste Co.,	Wadding and cotton waste,	37	4	1	–	Fair,	To post notices of working hours, designate water closets, and certificate for one child,	Complied.
Randall Fertilizer Works,	Fertilizers,	18	–	–	–	Fair,	None,	–
Bardwell, Anderson & Co.,	Tables, side-boards and desks,	150	–	–	3	Fair,	To post notice of working hours, and certificates for three children,	Complied.
Ailberry N. Dudley,	Shirts & overalls,	2	18	–	–	Bad,	To provide water closets, and guard sewing machine shafting,	Complied.
Lockwood Manufacturing Co.,	Machinery,	40	–	–	–	Good,	To guard fly-wheel and crank to engine,	Complied.

DISTRICT NO. 4 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
City of Boston — Concluded.								
American Arms Co.,	Fire-arms,	100	–			Fair,	None,	–
Potter & Wrightington,	Canned meats, fish, beans, etc.,	31	31			Good,	None,	–
John W. Cottam,	Leather clothing,	6	25			Good,	To post notices of working hours, and designate water closets,	Complied.
Thomas Hoey,	Steam and gas pipe fittings,	26	–			Good,	None,	–
Boston Dye Wood Co.,	Dyes & chemicals,	100	–			Good,	None,	–
E Hodge & Co.,	Steam boilers,	65	–			Good,	None,	–
Andrew B Porter,	Morocco dressing,	30	–			Fair,	None,	–
Atlantic Iron Works,	Machinery and heavy iron workers,	100	–			Good,	None,	–
Alexander McLaren,	Planing mill and house finishings,	20	–			Good,	None,	–
New England Cooperage Co.,	Tanks, casks, pails, etc.,	75	–			Good,	None,	–
Glendon Company,	House finishings,	250	–			Good,	None,	–
New England Pottery Co.,	Crockery ware,	70	12			Good,	None,	–
Boston & Lockport Block Co,	Machine, blacksmith work and brass foundry,	45	–			Good,	None,	–

Boston Forge Co.,	Forgings,	75	–	–	–	Good,	None,	–
Atlantic Dye Wood Co.,	Dyes & chemicals,	50	–	–	–	Good,	None,	–
National Tube Works,	Mack's patent injectors,	60	–	–	–	Good,	None,	–
Wm. L. Sturtevant,	Planing mill,	12	–	–	–	Good,	None,	–
Samuel T. Manson,	Planing mill,	20	–	–	–	Good,	None,	–
Central Iron Foundry,	Gurney heating apparatus and castings,	75	–	–	–	Good,	None,	–
City of Chelsea.								
Eastern Elastic Gusset Co.,	Elastic gorings,	52	20	–	–	Good,	None,	–
J. Martin & Brothers,	Elastic fabrics,	15	160	–	–	Good,	None,	–
Chelsea Web Co.,	Elastic fabrics,	13	77	–	–	Good,	None,	–
Chelsea Suspender Mfg. Co.,	Suspenders,	3	25	–	–	Good,	None,	–
Forbes Lithograph Co.,	Lithographs,	366	36	–	–	Good,	None,	–
Charles H. Newhall & Co.,	Mattresses and bedding,	11	7	–	–	Good,	To post notices of working hours,	Complied.
Steel Edge Stamping Co.,	Tin and stamped ware,	70	30	–	3	Good,	None,	–
Boston Rubber Co.,	Rubber cloth and clothing,	80	110	–	–	Good,	None,	–
Thomas Strahan,	Wall paper,	40	–	–	–	Good,	To post notice of working hours,	Complied.
Ewing Bros. & Co.,	Printing material,	10	–	–	–	Good,	To guard fly-wheel,	Complied.
John G. & J. S. Low,	Art tiles,	17	17	–	–	Good,	None,	–
Dickinson Type Foundry,	Type,	60	60	–	–	Good,	None,	–
American Fire Hose Co.,	Fire supplies,	16	4	–	–	Good,	None,	–
Magee Furnace Co.,	Furnaces and ranges,	350	–	–	–	Good,	None,	–
Suffolk Cordage Co.,	Cordage & twine,	60	30	–	–	Good,	None,	–
Sawyer's Crystal Blue,	Bluing & blacking,	7	8	–	–	Good,	None,	–

DISTRICT No. 4 — *Concluded.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
City of Chelsea — Concluded.								
Revere Rubber Co.,	Rubber belting, hose & packing,	180	12	–	–	Good,	None,	–
Chelsea Wire Fabric Co.,	Rubber goods for mechanical uses,	40	–	–	–	Good,	To guard grinding rolls, and counter belt,	–
D. & L. Slade,	"	10	4	–	–	Good,	None,	–
White, Holman & Co.,	Chairs,	60	–	–	–	Good,	None,	–
J. W. Stickney & Co.,	Whiting,	13	–	–	–	Good,	None,	–
Baker & Oliver,	Gilt mouldings,	45	–	–	–	Good,	None,	–
T H Buck,	Planing mill,	15	–	–	–	Good,	None,	–
David S Miner,	Vests,	3	14	–	–	Good,	None,	–
H. Mason & Son,	Newspaper and job printing,	6	4	–	–	Good,	None,	–

DISTRICT No. 5, ... JUSTIN B. WILLARD, *Inspector.*

CITY OF WORCESTER.								
Ashworth & Jones Mill,	Dress goods,	53	32	–	5	Fair,	Water closets designated,	Complied.
Worcester Woollen Mill,	Fancy cassimeres,	115	120	3	16	Good,	None,	–
Whittall Carpet Mill,	Carpets,	194	36	–	24	Fair,	Crank and fly-wheel guarded,	Complied.

Worcester Carpet Mill,	Carpets,	132	84	–	29	Fair,	Crank and fly-wheel guarded,	Complied.
Edgeworth Mill,	Carpet yarns,	27	80	–	7	Fair,	Crank and fly-wheel guarded,	Complied.
Fox Mill,	Satinets and cloakings,	47	38	–	2	Fair,	None,	–
Hopeville Mfg. Co.,	Satinets,	20	16	–	–	Fair,	None,	–
Curtis Mfg. Co.,	Satinets and dress goods,	70	30	–	5	Fair,	Fly-wheel guarded & stairway railed,	Complied.
J. W. Darling Mill,	Satinets,	25	10	–	–	Fair,	None,	–
A. D. Samson & Co.,	Boot welts,	5	25	–	–	Fair,	None,	–
Piedmont Mill,	Satinets,	25	20	–	–	Fair,	Time notices posted,	Complied.
A. H. Dean,	Boot and shoe stock,	50	75	–	1	Fair,	Children's certificates,	Complied.
E. D. Barrows,	Boot and shoe stock,	25	–	–	9	Fair,	None,	–
S. R. Heywood & Co.,	Shoes,	160	40	–	–	Good,	None,	–
J. E. Wesson,	Shoes,	90	50	–	2	Good,	None,	–
Bay State Shoe & Leather Co.,	Boots and shoes,	160	140	1	14	Fair,	None,	–
E. H. Stark & Co.,	Boots and shoes,	130	20	–	–	Fair,	Shafting guarded,	Complied.
Walker & Brown,	Boots and shoes,	90	10	–	–	Fair,	Fly-wheel guarded,	Complied.
Whitcomb & Miles,	Boots and shoes,	94	6	–	–	Fair,	Shafting guarded,	Complied.
David Cummings' Boot Shop,	Boots and shoes,	80	20	1	2	Fair,	Self-closing gates to elevator,	Complied.
Tatnuck Woollen Mill,	Satinets,	21	13	–	–	Fair,	None,	–
June St. Mill,	Satinets,	11	7	–	–	Fair,	Fly-wheel guarded and time notices,	Complied.
Iver Johnson & Co.,	Fire arms,	200	–	2	13	Fair,	Fly-wheel guarded,	Complied.
National Mfg Co.,	Wire goods,	25	155	1	–	Fair,	None,	–
Wire Goods Co.,	Wire goods,	44	14	–	1	Fair,	Time notices posted,	Complied.
H. C. Peas,	Planers and shoe machinery,	72	–	–	–	Fair,	None,	–
Henry Brannon,	House and office furniture,	14	–	–	–	Fair,	None,	–

* Yeast powder, cream of tartar, mustard and spices.

DISTRICT No. 5 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
City of Worcester — Continued.								
Northern Publishing Co.,	Weekly paper,	7	–	–	2	Fair,	Time notices posted,	Complied.
Beckford & Bliss,	Slippers,	10	15	–	–	Fair,	Shafting guarded and separate water closets,	Complied.
Myrick, Shepherd & Co.,	Boot & shoe stock,	3	29	–	1	Fair,	None,	–
Geo L. Battelle,	Boots and shoes,	6	4	–	–	Fair,	Shafting guarded and time notices posted,	Complied.
L. B. Butler Mill,	Satinets,	17	13	–	–	Fair,	None,	–
City Steam Laundry,	Laundry,	6	4	–	–	Fair,	Time notices posted,	Complied.
White, Pevey & Dexter,	Slaughter house,	75	–	–	–	Fair,	None,	–
Worcester Malleable Iron Works,	Malleable iron,	24	–	–	–	Fair,	None,	–
Norcross Bros,	Builders,	150	–	–	–	Fair,	None,	–
A. M. Howe,	Cutting dies,	15	–	–	–	Fair,	None,	–
S. Mawhinney & Co.,	Lasts & boot-trees,	30	–	–	–	Fair,	None,	–
Worcester Steel Works,	Bessemer steel,	275	–	–	–	Fair,	Self-closing gates to elevators,	Complied.
Graton & Knight,	Leather belting and shoe stock,	195	5	–	5	Fair,	Time notices & children's certificates,	Complied.
Wheelock Engine Co.,	Steam engines,	40	–	–	–	Fair,	None,	–
Gilbert Loom Co.,	Looms,	40	–	–	–	Fair,	Fly-wheel and belt guarded,	Complied.
Holyoke Machine Co.,	Water wheels,	104	–	–	–	Fair,	None,	–
L. W. Pond Machine Co.,	Planers,	25	–	–	–	Fair,	None,	–
Luther Baker,	Store,	–	–	–	–	Fair,	Self-closing gates to elevator,	Complied.
Wesby & Sons,	Book-bindery,	10	12	–	–	Fair,	None,	–

Z. A. Hubley,	Rags and peddlers' supplies,	18	22	–	–	Poor,	Time notices posted and water closets designated,	Complied.
G. L. Brownell,	Wire twisting machinery,	22	–	–	–	Fair,	Fly-wheel and belt guarded,	Complied.
Colby & Porter,	Lasts,	26	–	–	–	Fair,	None,	–
Johnson & Bassett,	Wool spinning machinery,	50	–	–	–	Fair,	None,	–
Crompton Loom Works,	Looms,	615	2	5	19	Fair,	Elevator openings guarded,	Complied.
Wachusett Mill,	Ginghams,	3	17	–	–	Fair,	Crank and fly-wheel guarded,	Complied.
Wyman & Gordon,	Drop forging,	35	–	–	–	Bad,	None,	–
William Allen & Son,	Steam boilers,	125	–	–	–	Fair,	Fly-wheel guarded,	Complied.
Rice, Barton & Fales,	Paper machinery,	160	–	–	–	Fair,	Fly-wheel guarded,	Complied.
Washburn & Moen Manufacturing Co., Grove Street Works,	Wire,	1900	40	–	–	Fair,	Cranks and fly-wheels and pulleys guarded,	Complied.
H. O Hudson & Co.,	Leather belting,	20	–	–	–	Fair,	Hoistways guarded,	Complied.
Witherby, Rugg & Richardson,	Wood working machinery,	50	–	–	–	Fair,	Gates to elevator,	Complied.
Richardson Manufacturing Co.,	Mowing machines,	50	–	–	–	Fair,	Hoistways guarded,	Complied.
Ames Plow Co.,	Plows,	180	–	–	–	Fair,	Crank and fly-wheel guarded,	Complied.
Washburn & Moen Quinsigamond Works,	Wire,	1400	–	–	–	Fair,	Engine cranks and wire rope machine guarded,	Complied.
Worcester Wire Co.,	Wire,	100	–	–	–	Fair,	Crank to engine guarded,	Complied.
Bowler Bros.	Ales and porter,	35	–	–	–	Fair,	None,	–
Prentice Bros.,	Machinist tools,	100	–	–	–	Fair,	None,	–
Knowles Loom Works,	Looms,	430	–	–	4	Fair,	None,	–
Rice & Griffin Manufacturing Co.,	Sash and blinds,	80	–	–	–	Fair,	None,	–
Lathe & Morse,	Machinist tools,	40	–	–	–	Fair,	Fly-wheel to engine guarded,	Complied.
F. E. Reed,	Machinist tools,	135	–	–	–	Fair,	None,	–

DISTRICT NO. 5 — *Concluded.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	NUMBER EMPLOYED.				Sanitary Condition.	Orders Given.	Compliances.
		Males	Females	Under 14.	14 to 18.			
City of Worcester — Continued.								
Worcester Steam Heating Co.,	Steam heaters,	33	–	–	–	Fair,	None,	–
W. H. Eddy,	Lathes and planers,	15	–	–	–	Fair,	None,	–
Thomas Smith & Co.,	Bolts, nuts and washers,	30	–	–	–	Fair,	None,	–
A. F. Stowe,	Boot and shoe machinery,	10	–	–	–	Fair,	None,	–
Loring & Blake,	Organs,	85	–	–	–	Good,	None,	–
Monroe Organ Reed Co.,	Organ reeds,	57	3	–	–	Good,	Crank and fly-wheel guarded,	Complied.
Coes Wrench Co,	Wrenches,	100	–	–	–	Fair,	Crank and fly-wheel, gears and driving belt guarded,	Complied.
T. K. Earle Manufacturing Co.,	Card clothing,	45	15	–	–	Good,	Crank and fly-wheel guarded,	Complied.
W. Hill,	Envelopes,	25	75	–	–	Good,	None,	–
Ruddy Thread Co.,	Thread,	7	13	–	–	Good,	Time notices,	Complied.
I. N. Keys Box Shop,	Boxes and planing,	35	–	–	–	Fair,	New rope to elevator and bars to hoistways,	Complied.
A. H. Hammond,	Organ reeds,	35	10	–	2	Fair,	Crank and fly-wheel guarded and new rope to elevator,	Complied.
Mason & Risch,	Vocalion organs,	47	3	–	–	Fair,	Crank guarded,	Complied.
C. Baker & Co.,	Builders' supplies,	125	–	–	–	Fair,	Crank and fly-wheel guarded and chain to hoistway,	Complied.
W. J. Howe,	Boxes,	10	–	–	–	Bad,	New rope to elevator,	Complied.

L. C. Clark,	Doors, sash and blinds,	22	–	–	–	Bad,	None,	–
P. G. Kent & Co,	Satinets,	85	55	–	–	Fair,	Crank and fly-wheel guarded,	Complied.
Worcester Ferule Co.,	Ferules,	50	–	–	–	Fair,	None,	–
T. P. Haskel,	Shirts and overalls,	6	6	–	–	Fair,	Shafting guarded,	Complied.
W. C. Young,	Machinist tools,	20	–	–	–	Fair,	Crank and fly-wheel guarded,	Complied
J. F. Wilson,	Cold iron punching,	12	–	–	–	Fair,	Gears to press guarded,	Complied.
G. W. Ingalls,	Organ reeds,	16	16	–	–	Fair,	Gears to press and driving belt guarded,	Complied.
Worcester Pants Mfg. Co,	Pants,	15	15	–	–	Fair,	None,	–
Wire Goods Co,	Wire goods,	7	15	–	1	Fair,	None,	–
Howard Bros,	Card clothing,	16	4	–	–	Fair,	None,	–
Harrison Woolen Mill,	Satinet,	11	9	–	–	Fair,	None,	–
F. W. Blacker,	Boots and shoes,	28	2	–	–	Fair,	Fly-wheel and shafting guarded,	Complied.
Union Water Meter Co,	Water meters,	50	–	–	–	Fair,	None,	–
W. H. Warren,	Special machinery,	10	–	–	–	Fair,	None,	–
Logan, Swift & Brigham,	Envelopes,	15	85	–	–	Fair,	Time notices posted,	Complied.
William H. Burns & Co.,	Ladies' underwear,	5	345	–	–	Fair,	None,	–
Worcester Corset Co.,	Corsets,	22	328	–	19	Fair,	Shafting guarded,	Complied.
C. H. Hutchins & Co,	Elastic web and tapes,	8	62	–	3	Fair,	None,	–
Goddard, Stone & Co.,	Boots and shoes,	300	50	–	–	Fair,	Fly-wheel and shafting guarded,	Complied.
H. M. Witter,	Tapes,	10	50	–	1	Fair,	Children's certificates,	Complied.
J. R. Torry Razor Co,	Razors and strops,	50	50	–	5	Fair,	Fly-wheel guarded, certificates and time notices,	Complied.
Harrington & Richardson Arms Co,	Revolv'g fire-arms,	140	–	–	–	Fair,	None,	–
Glasgow Thread Co,	Thread,	13	57	–	2	Fair,	Crank and fly-wheel guarded,	Complied.
Weeks Manufacturing Co,	Worsted goods,	25	30	–	–	Fair,	None,	–
Wire Goods Manufacturing,	Wire goods,	30	40	–	3	Fair,	Children's certificates,	Complied
L. D. Thayer Manufacturing Co,	Tapes,	3	49	–	–	Fair,	Crank and fly-wheel guarded,	Complied.
Sargent Card Clothing Co.,	Card clothing,	32	8	–	–	Fair,	Fly-wheel guarded,	Complied.
C. F. Kent,	Card clothing,	4	2	–	–	Fair,	None,	–

DISTRICT No. 5 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	NUMBER EMPLOYED.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
City of Worcester — Concluded								
A. G. Hildreth,	Overalls,	1	14	–	–	Fair,	Shafting guarded,	Complied.
C. W. Humphrey,	Paper boxes,	4	38	–	–	Fair,	None,	–
E. & J. W. Lathrop,	Machine needles,	2	–	–	2	Fair,	None,	–
C. C. Houghton & Co.,	Boots and shoes,	80	20	–	1	Fair,	None,	–
Samuel Winslow Skate Co.,	Skates,	60	–	–	2	Fair,	Self-closing gates to elevator and belt guarded,	Complied.
Waverly Screw Shoe Co.,	Shoes,	54	27	–	1	Fair,	None,	–
E. A. Hall,	Boot welts & heels,	–	15	–	1	Fair,	None,	–
E. N. Dean,	Shoe heels,	10	135	–	20	Fair,	None,	–
Wachusett Mill,	Ginghams,	–	16	–	2	Fair,	Children's certificates and time notices,	Complied.
Holland Hosiery Co.,	Stockings,	5	25	–	3	Fair,	Children's certificates and time notices,	Complied.
Geo. C. Whitney,	Valentines and holiday cards,	35	75	–	–	Fair,	None,	–
CITY OF FITCHBURG.								
James McTaggart's Mill,	Fancy cassimeres,	65	25	1	2	Poor,	To discharge child under thirteen,	Complied.
Beoli Mills,	Worsted coatings,	187	188	–	12	Good,	None,	–
Cleghorn Mills,	Ginghams,	138	137	–	12	Good,	None,	–
E. F. Belding & Co.,	Shoes,	45	30	–	2	Fair,	None,	–
E. M. Dickinson & Co.,	Shoes,	53	25	–	1	Fair,	Fly-wheel guarded,	Complied.

Geo. W. Wheelwright Paper Co.,	Paper,	25	25	–	–	Fair,	None,	–
Fitchburg Worsted Co.,	Worsted suitings,	150	200	2	18	Fair,	None,	–
Fitchburg Duck Mill,	Cotton duck,	30	60	2	13	Fair,	None,	–
Fitchburg Cotton Mill,	Cotton warp,	14	38	–	–	Fair,	None,	–
Orswell Mill,	Cotton yarn,	67	134	2	20	Fair,	None,	–
Star Worsted Co.,	Worsted yarn,	43	64	–	15	Fair,	None,	–
Park Hill Mills,	Ginghams,	290	287	6	67	Good,	None,	–
Walter Heywood Chair Mfy.,	Chairs,	275	–	–	–	Good,	Driving belt guarded,	Complied.
Crocker, Burbank & Co. Paper Mills,	Paper,	110	58	–	–	Fair,	Elevator and gears guarded, and time notices,	Complied.
Baltic Mill,	Shirting and dress goods,	45	85	–	5	Fair,	None,	–
Fitchburg Paper Co.,	Paper,	150	36	–	4	Fair,	Fly-wheels guarded and hatch to elevator,	Complied.
Putnam Machine & Tool Co.,	Machinery and tools,	350	–	–	–	Good,	Fly-wheel to engines guarded,	Complied.
Fitchburg Steam Engine Co.,	Steam engines,	50	–	–	–	Good,	Crank and fly-wheel to engine guarded,	Complied.
Union Machine Co.,	Paper machinery,	57	–	–	–	Good,	None,	–
Rollstone Machine Co.,	Wood working machinery,	30	–	–	–	Good,	None,	–
West Brookfield.								
J. T. Wood & Co.,	Boots and shoes,	25	–	–	–	Fair,	None,	–
John Fales Son & Co.,	Boots and shoes,	20	–	–	–	Fair,	None,	–
Bay State Corset Co.,	Corsets,	4	81	–	4	Fair,	Children's certificates,	Complied.
M. J. Savage & Co.,	Boots and shoes,	38	2	–	1	Fair,	None,	–
Mackintosh & Co.,	Boots and shoes,	42	8	–	1	Fair,	None,	–
Allen & Makepeace,	Boots and shoes,	12	–	–	–	Fair,	None,	–

DISTRICT No. 5 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
WINCHENDON.								
Morton E. Converse Factory, .	Toys and reed goods, . .	75	25	1	2	Fair, .	Children's certificates, . . .	Complied.
Nelson Mill, No. 2, . . .	Blue denims, .	130	60	–	18	Fair, .	Fly-wheel to engine guarded, also certificates, ...	Complied.
G. N Goodspeed Mill, . .	Wood working machinery, .	60	–	–	–	Fair, .	None, ...	–
Nelson Mill, No. 1, . . .	Blue denims, .	30	30	–	9	Fair, .	Children's certificates, . . .	Complied.
William Brown & Son, . .	Pails, . . .	40	3	–	–	Fair, .	None, ...	–
Glen Allen Mill, ...	Blue denims, .	52	48	1	11	Fair, .	Children's certificates, . . .	Complied.
UPTON.								
William Knowlton & Sons, . .	Straw hats, . .	175	425	–	–	Fair, .	Fly-wheel and shafting guarded, and water closets designated, .	Complied.
J. J. Nelson, ...	Ladies' straw hats,	12	49	–	–	Fair, .	None, ...	–
W. Chamberlain, ...	Ladies' straw hats,	8	9	–	–	Fair, .	None, ...	–
WARREN.								
Warren Cotton Mills, . . .	Colored cottons, .	321	322	–	–	Fair, .	Crank and fly-wheel and pulley guarded, ...	Complied.
Knowles Steam Pump Works, .	Steam pumps, .	400	–	–	–	Fair, .	None, ...	–
Warren Mills, ...	Cassimeres, . .	150	50	–	12	Fair, .	Children's certificates, . . .	Complied.
Whipples Cotton Mill, . .	Cotton cloth, .	5	20	–	2	Fair, .	None, ...	–

Webster.								
H. N. Slater Manufacturing Co.,	Cotton cloths,	219	233	3	31	Fair,	Children's certificates,	Complied.
H. N. Slater Cambric Works,	Cambric,	135	15	1	7	Fair,	Crank to engine guarded,	Complied.
Slater Woolen Co.,	Broadcloths,	550	300	–	78	Fair,	Crank and fly-wheels to engine guarded,	Complied.
B. A. Corbin & Son,	Shoes,	260	40	–	20	Fair,	None,	–
Westminster.								
Nichols Bros.,	Chairs,	65	–	–	–	Fair,	None,	–
Artemas Merriam,	Chairs,	75	–	–	–	Fair,	Crank and fly-wheel guarded and bars to hoistways,	Complied.
Franklin Wyman,	Paper,	25	5	–	–	Fair,	Gears guarded and time notices posted,	Complied.
Westborough.								
Gould & Walker,	Boots and shoes,	200	75	4	14	Fair,	Children's certificates,	Complied.
Geo. B. Brigham & Sons,	Boots and shoes	125	25	–	4	Fair,	Crank and fly-wheel and shafting guarded,	Complied.
H. O. Bernard Manufacturing Co.,	Straw goods,	133	367	–	1	Fair,	Shafting guarded,	Complied.
Bates & Beaman,	Straw goods,	112	8	–	–	Fair,	Shafting guarded,	Complied.
Brooks & Wells,	Boots and shoes,	125	25	–	–	Fair,	Shafting guarded,	Complied.
Templeton.								
Otto River Co.,	Horse blankets,	44	44	2	6	Fair,	Children's certificates,	Complied.
River Mills,	Cassimeres,	23	24	–	6	Fair,	Children's certificates,	Complied.
Templeton Mills,	Woollen yarn,	20	–	–	2	Fair,	Children's certificates,	Complied.
D. L. Thompson & Co.,	Chairs,	30	–	–	–	Fair,	Elevator well sheathed,	Complied.
Baker & Wilson,	Toy wagons,	20	–	–	–	Fair,	Elevator well sheathed, time notices,	Complied.
White Chair Co.,	Chairs,	43	–	–	1	Fair,	Elevator well sheathed, time notices,	Complied.
Winchester Box Mfg Co.,	Boxes,	90	4	3	1	Fair,	Time notices,	Complied.
Asbestos Paper Co.,	Asbestos paper,	24	16	1	1	Poor,	Children's certificates and time notices posted,	Complied.

DISTRICT No. 5 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition	Orders Given	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
Templeton — Concluded.								
Smith, Day & Co.,	Chairs,	35	–	–	3	Fair,	Children's certificates and time notices posted,	Complied.
Holman & Harris,	Buckets,	70	–	1	3	Fair,	Children's certificates and time notices posted,	Complied.
Coop Chair Co.,	Chairs,	35	–	–	–	Fair,	Self-closing gates to elevator,	Complied.
T. D. Greenwood Furniture Co.,	Furniture,	35	–	–	–	Fair,	None,	–
C. N. Johnson,	Toys,	20	–	–	–	Fair,	Belts guarded and bars to hoistways,	Complied.
Bowen, Hadly & Co.,	Furniture,	45	–	–	–	Fair,	None,	–
UXBRIDGE.								
Elmdale Mill,	Satinets,	30	25	–	5	–	Fly-wheel guarded,	Complied.
Hecla Mills,	Cassimeres,	80	70	1	9	Fair,	Crank to engine guarded,	Complied.
Waucantuck Mill,	Woollen goods,	51	24	–	8	Fair,	Crank to engine guarded,	Complied
Rivulet Mill,	Satinets,	38	22	–	–	Fair,	None,	–
Calumet Woollen Co.,	Woollen goods,	90	45	–	5	Fair,	None,	–
Uxbridge Cotton Mill,	Fine sheetings,	60	75	3	10	Fair,	None,	–
Capron Woollen Co.,	Satinets,	36	29	–	6	–	None,	–
SPENCER.								
Israel Prouty,	Boots and shoes,	600	250	1	18	Fair,	Children's certificates,	Complied.
Bacon, Young & Co.,	Boots and shoes,	72	18	–	2	Fair,	Shafting guarded,	Complied.
Bacon & Sibley,	Boots and shoes,	60	15	–	3	Fair,	None,	–

Prouty Bros.,	Boots and shoes,	40	8	–	–	Fair,	None,	–
Bemis & Allen,	Boots and shoes,	35	5	–	–	Fair,	None,	–
E. Jones & Co,	Boots and shoes,	115	15	–	–	Fair,	Shafting guarded,	Complied.
D Bullard & Co.,	Boots and shoes,	90	10	–	–	Fair,	Shafting guarded,	Complied.
Spencer Co-op Boot & Shoe Co.,	Boots and shoes,	21	4		–	Fair,	Shafting guarded,	Complied.
Geo. P. Ladd Mills, No. 1, 2, 3 & 4,	Union cassimeres,	128	112		7	Fair,	None,	–
J. Greene & Co,	Boots and shoes,	20	5		1	Fair,	Shafting guarded,	Complied.
Spencer Wire Co.,	Wire,	127	–		–	Fair,	None,	–
W. A. Barr & Son,	Boot heels,	5	40		1	Fair,	None,	–
SOUTHBRIDGE.								
Hamilton Woollen Mills,	Cass. and worsted dress goods,	425	514	6	105	Good,	None,	–
American Optical Co.,	Optical goods,	500	100		10	Good,	None,	–
Central Mills Co.,	Cotton cloths,	53	107		34	Good,	None,	–
Southbridge Printing Co.,	Print cloths,	136	14		7	Fair,	Gears and belt guarded,	Complied.
SUTTON.								
B. B. & R Knight Cotton Mills,	Cotton cloths,	325	325	10	99	* –	None,	–
Sutton Manufacturing Co.,	Cotton cloths,	58	117	4	7	Fair,	None,	–
G. A. Bigelow Mill,	Satinets,	19	11		3	Fair,	None,	–
F. B. Smith Mill,	Shoddy,	12	5		–	Fair,	Pulley guarded,	Complied.
NORTHBOROUGH.								
Chapin Woollen Mill,	Satinets,	107	22		6	Fair,	Children's certificates,	Complied.
Woodside Mill,	Satinets,	60	60		5	Fair,	None,	–
Milo Hildreth,	Combs,	21	2	–	–	Fair,	None,	–
W. M Farwell,	Combs,	20	2	–	–	Fair,	None,	–
J. Proctor,	Buttons,	18	2	–	–	Fair,	Crank and fly-wheel guarded, and elevator repaired,	Complied.

* Excellent.

DISTRICT No. 5 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	NUMBER EMPLOYED.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females	Under 14.	14 to 16.			
NORTHBRIDGE.								
Rockdale Mill,	Cotton cloth,	75	75	–	23	Fair,	None,	–
Whitinsville Cotton Mill,	Cotton cloth,	80	80	1	11	Fair,	Water closets designated,	Complied.
Linwood Mill,	Cotton cloth,	90	100	3	16	Fair,	None,	–
Whiting's Machine Works,	Cotton machinery,	800	–	–	21	Fair,	Time notices posted,	Complied.
NORTH BROOKFIELD.								
E. & A. H. Batchelder,	Boots and shoes,	775	225	4	59	Fair,	None,	–
RUTLAND.								
Lakeside Woollen Co.,	Satinets,	23	10	–	–	Fair,	Time notices posted,	Complied.
Rutland Woollen Mill,	Satinets,	11	5	–	–	Fair,	Gears and belt guarded, and time notices posted,	Complied.
ROYALSTON.								
Whitney's Woollen Mill,	Fancy cassimeres,	70	30	1	5	Fair,	Children's certificates,	Complied.
STURBRIDGE.								
Fiskdale Mill's Co,	Cotton cloths,	200	145	–	69	Fair,	None,	–
Snell Manufacturing Co.,	Bitts and augers,	100	–	–	–	Fair,	None,	–
LEICESTER.								
Leicester Woollen Mill,	Flannels,	50	35	–	11	Good,	None,	–
Chappel Mill,	Satinets,	23	12	–	1	Poor,	None,	–

Collier's Mill,	Satinets,	8	7			Poor,	None,	–
Valley Woollen Mill,	Satinets,	51	40	3	1	Fair,	Fly-wheel guarded, and children's certificates,	Complied.
Lakeside Manufacturing Co.,	Satinets,	25	20			Fair,	Water closets designated,	Complied.
Mannville Mill,	Satinets,	35	15			Fair,	Fly-wheel guarded,	Complied.
Bottomly Mill,	Satinets,	46	23			Fair,	None,	–
Greenville Mill,	Satinets,	28	12		1	Fair,	Children's certificates, and water closets designated,	Complied.
Rochdale Mills,	Flannels and dress goods,	65	60	2	2	Fair,	Children's certificates, water closets designated, and hoistway guarded,	Complied.
L. S. Watson,	Card clothing,	20	–			Fair,	Fly-wheel and belt guarded,	Complied.
J. J. Murdock,	Card clothing,	25	4			Fair,	Time notices posted,	Complied.
Decker, Bonetz & Co.,	Card clothing,	18	2			Fair,	Fly-wheel guarded,	Complied.
W. N. & J. Whittemore,	Card clothing,	10	2			Fair,	None,	–
Bisco & Denny,	Card clothing,	12	–			Fair,	None,	–
C. W. Warren & Son,	Boot and shoe heels stock,	12	18		4	Fair,	Fly-wheel guarded, and time notices, and water closets designated,	Complied.
MILLBURY.								
Millbury Cotton Mill,	Print cloths,	60	70	4	6	Fair,	None,	–
Cordis Mills,	Tickings,	59	79		3	Good,	None,	–
Wheeler Cotton Mill,	Fancy cottons,	30	30		7	Fair,	None,	–
Stonemetz Printers' Machine Co.,	Printers' machin'y,	40	–			Good,	Pulley guarded,	Complied.
M. A. Lapham's Mill,	Fancy cassimeres,	96	69	2	6	Fair,	None,	–
Rhodes' Mills, Nos. 1 & 2,	Cotton warp,	25	32	1	5	Fair,	None,	–
Crane & Water's Mill,	Ladies' and gents' underwear,	43	73		4	Fair,	None,	–
Atlantic Mill,	Satinets,	13	4			Fair,	None,	–
Peter Simpson Woollen Mill,	Satinets,	65	35		7	Fair,	Fly-wheel and driving belt guarded,	Complied.
HARDWICK.								
Hardwick Mill,	Woollen dress goods,	360	210	1	59	Good,	None,	–

DISTRICT NO. 5 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
LEOMINSTER.								
Edward M. Rockwell Mill,	Woollen yarn,	100	35	1	–	Fair,	None,	–
Leominster Worsted Co,	Worsted suitings,	25	25	–	–	Fair,	None,	–
Leominster Shirt Co.,	Shirts,	15	75	–	4	Fair,	None,	–
E. B Kingman & Co,	Horn goods,	63	12	–	1	Fair,	Fly-wheel guarded,	Complied.
Wilcox Pen Co.,	Fountain pens,	45	4	–	–	Fair,	None,	–
S. C White,	Horn goods,	16	4	–	–	Fair,	None,	–
H. M. Richardson & Co.,	Wooden ware,	9	–	2	2	Fair,	Fly-wheel guarded, and children's certificates,	Complied.
Valpy & Anthony,	Shoes,	48	32	–	3	Good,	Children's certificates,	Complied.
Bay State Shirt Co,	Shirts,	4	100	–	3	Good,	None,	–
Wachusett Shirt Co,	Shirts,	3	520	–	3	Good,	None,	–
W. S. Reed Toy Co.,	Toys,	65	10	–	14	Fair,	Fly-wheel guarded, and time notices posted,	Complied.
F. A. Whitney Carriage Co.,	Baby carriages,	127	23	–	–	Fair,	None,	–
Daman, Howe & Co.,	Combs,	23	2	–	–	Fair,	Fly-wheel guarded,	Complied.
B. F. Blodgett & Co,	Combs,	32	3	–	–	Fair,	Stairway guarded,	Complied.
Geo. W. Wheelwright Paper Co,	Paper,	50	20	–	–	Fair,	Gears guarded,	Complied.
Merriam, Hall & Co,	Chamber furniture,	80	–	3	1	Fair,	Time notices posted,	Complied.
C. H Buswell & Co.,	Tannery,	55	–	–	–	Fair,	Safety catches to elevator,	Complied.
Smith & Baker,	Ladies' shoes,	18	18	–	2	Fair,	Time notices posted,	Complied.

LANCASTER.								
Lancaster Manufacturing Co.,	Cotton yarn,	18	10	–	–	Fair,	Belt guarded,	Complied.
GARDNER.								
Conant & Bush,	Chairs,	54	11	–	–	Fair,	None,	–
Heywood Bros. & Co.,	Chairs,	1175	125	–	21	Fair,	Fly-wheel and belt guarded, children's certificates,	Complied.
Conant, Ball & Co,	Chairs,	38	–	–	–	Fair,	None,	–
P. Derby & Co.,	Chairs,	100	–	–	–	Fair,	None,	–
J. A. Dunn,	Chairs,	80	–	–	–	Fair,	None,	–
E. Wright & Co.,	Chairs,	35	–	–	–	Fair,	Guard to hoistways,	Complied.
A. & H. C. Knowlton,	Chairs,	50	–	–	–	Fair,	Crank and fly-wheel guarded,	Complied.
Heywood Foundry Co.,	Castings,	20	–	–	–	Fair,	Driving-belt guarded,	Complied.
American Oil Stove Co,	Oil stoves,	35	–	–	–	Fair,	None,	–
S. K. Pierce & Sons,	Chairs,	90	–	–	–	Fair,	Crank and fly-wheel and belt guarded and hoistway,	Complied.
Wright & Read,	Chairs,	35	–	–	–	Fair,	None,	–
C. S. Greenwood & Sons,	Chairs,	20	–	–	–	Fair,	None,	–
S. Bent & Bros.,	Chairs,	75	–	–	–	Fair,	Crank and fly-wheel and hoistways guarded,	Complied.
L. B. Ramsdell,	Toys,	35	–	–	–	Fair,	Belt and pulley guarded and gates to elevator,	Complied.
HOLDEN.								
Dawson Manufacturing Co.,	Satinets,	53	12	–	–	Fair,	Crank and fly-wheel guarded,	Complied.
Quinapoxet Mills, Nos. 1 and 2,	Satinets,	140	60	–	14	Fair,	None,	–
North Woods Mill,	Cassimeres,	35	10	–	3	Fair,	None,	–
Holden Mill,	Print cloth and sheeting,	30	35	1	2	Fair,	Belt guarded and children's certificates,	Complied.
Jeffersonville Manufacturing Co.,	Woollen goods,	150	75	–	8	Fair,	None,	–
Ledge River Worsted Mill,	Woollen goods,	20	20	1	3	Fair,	None,	–

DISTRICT NO. 5 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	NUMBER EMPLOYED.				Sanitary Condition	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
HUBBARDSTON.								
Eagle Woollen Mill,	Satinets,	19	9	–	2	Fair,	Time notices posted,	Complied.
CLINTON.								
Lancaster Mills,	Ginghams,	961	961	7	149	Good,	Crank to engine and main shaft guarded,	Complied.
Bigelow Carpet Co,	Carpets and carpet yarns,	500	500	–	67	Good,	Cranks and fly-wheel and shaft guarded and elevator repaired,	Complied.
Clinton Wire Cloth Co,	Wire cloth and screens,	225	125	1	23	Good,	Time notices posted,	Complied.
Gibbs Loom, Harness & Reed Co.,	Reeds,	35	15	–	–	Fair,	Time notices posted and water-closets designated,	Complied.
J. B. Parker Machine Co,	Woollen mach'ry,	40	–	–	–	Fair,	None,	–
DUDLEY.								
John Chase & Co.,	Cassimeres,	250	150	–	20	Good,	None,	–
Eben S Stevens,	Satinets and jute twine,	27	53	–	7	Fair,	Driving belt guarded,	Complied.
William J Warren,	Paper,	12	1	–	–	Fair,	None,	–
L. D. Perry Mill,	Woollen yarns,	22	3	–	–	Fair,	Driving belt guarded & time notices,	Complied.
Josiah Perry Mill,	Fancy cassimeres,	63	62	–	14	Fair,	None,	–
Stephens' Linen Works,	Linen crashes,	181	209	10	53	Fair,	None,	–

Douglas.								
Douglas Ax Co.,	Axes,	350	–	–	–	Fair,	Balance-wheel guarded, elevator repaired,	Complied.
Douglas Woollen Manufactory,	Flannels,	75	30	–	–	Fair,	None,	–
Grafton.								
J. S. Nelson,	Shoes,	145	55	–	–	Fair,	Crank and fly-wheel and shafting guarded,	Complied.
Fisher Manufacturing Co.,	Cotton cloth,	135	130	2	20	Fair,	Crank to engine guarded,	Complied.
Farnumsville Cotton Mill,	Cotton cloth,	88	87	–	8	Fair,	Crank and fly-wheel guarded,	Complied.
Saunders Cotton Mill,	Cotton cloth,	72	63	5	11	Fair,	None,	–
Finlayson, Bousfield & Co.,	Linen thread,	100	200	10	11	Fair,	Crank to engine guarded,	Complied.
Gibbs & Allen,	Boots and shoes,	88	12	–	–	Fair,	Shafting guarded,	Complied.
S. A. Forbush,	Shoes,	60	15	–	2	Fair,	Crank and fly-wheel guarded,	Complied.
Pratt Manufacturing Co.,	Cotton warp,	20	15	–	9	Fair,	Children's certificates,	Complied.
West Boylston.								
Holbrook's Mill,	Cotton sheetings,	20	40	–	6	Fair,	None,	–
West Boylston Mfg Co.,	Cotton flannels,	150	150	6	21	Fair,	None,	–
Harris Mill,	Sheetings,	20	20	2	12	Fair,	Fly-wheel guarded,	Complied.
Whiting Mill,	Sheetings,	30	30	–	–	Fair,	None,	–
S. R. Warfield Mill,	Cotton warp,	16	4	–	–	Good,	None,	–
Clarendon Mill,	Counterpanes,	56	104	–	28	Good,	Water-closets designated,	Complied.
Lancaster Mill,	Cotton yarn,	75	36	2	6	Good,	None,	–
Brookfield.								
Geo. H. Burt,	Boots and shoes,	440	60	10	18	Fair,	Children's certificates,	Complied.
Dufton & Richards,	Satinets,	24	20	–	3	Fair,	Children's certificates,	Complied.
Sagindorph Mill,	Satinets,	57	19	–	5	Fair,	Children's certificates,	Complied.
East Brookfield Woollen Co.,	Shoddy,	93	7	–	1	Poor,	Crank and fly-wheel guarded,	Complied.

DISTRICT NO. 5 — *Concluded.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
BLACKSTONE.								
Blackstone Woollen Mill,	Fancy cassimeres,	200	125		2	Fair,	None,	-
Blackstone Manufacturing Co.,	Cotton cloth,	310	308	25	94	Good,	Gears guarded,	Complied.
Woonsocket Rubber Co.,	Rubber boots and shoes,	1000	100		27	Good,	Crank and fly-wheel guarded,	Complied.
Lawrence Felting Co.,	Felt goods,	140	50		2	Good,	None,	-
CHARLTON.								
Spring Brook Mill,	Satinets,	30	20		6	Good,	None,	-
Cady Brook Manufacturing Co.,	Satinets,	20	12			Good,	None,	-
Aldrich Mill,	Satinets,	15	15			Good,	None,	-
J. A. Chapman,	Satinets,	7	5			Fair,	None,	-
H. G. Lamb & Co.,	Shoes,	15	10			Fair,	None,	-
AUBURN.								
Auburn Worsted Mill,	Worsted suitings,	65	25			Fair,	None,	-
Stonoville Worsted Co.,	Worsteds and woollen yarns,	25	100		29	Fair,	Main belt guarded,	Complied.
ASHBURNHAM.								
W. F. Whitney,	Chairs,	166	9			Fair,	Guard to outside hoistways,	Complied.
J. E. Platt,	Chairs,	10	-			Fair,	None,	-
Ashburnham Cotton Mill,	Cotton yarn,	18	12		3	Fair,	Children's certificates,	Complied.
G. G. Rockwood,	Pails and tubs,	20	-			Fair,	None,	-

C. L. Noyes,	Toys,	10	–		Fair,	None,	–
Boston Chair Manufacturing Co.,	Chairs,	200	–		Good,	Crank, fly-wheel and gears guarded,	Complied.
Athol.							
W. Starr Lee,	Children's shoes,	125	75	6	Good,	None,	–
C. M. Lee,	Shoes,	67	65		Good,	None,	–
A. W. Lee,	Shoes,	20	20		Good,	None,	–
W. H. Kauffman,	Satinets,	8	7		Fair,	None,	–
Athol Silk Co.,	Silk thread,	12	48		Good,	None,	–
D. Tebo,	Satinets,	22	12		Fair,	None,	–
Athol Shoe Co.,	Shoes,	175	100	7	Good,	Self-closing gates to elevator,	Complied.
Miller's River Manufacturing Co.,	Blankets and satinets,	25	25		Fair,	None,	–
Barre.							
Smithville Mill,	Cotton cloth,	48	20	3	Fair,	Children's certificates, and water closets designated,	Complied.
Berlin.							
J. H. Parker,	Boots and shoes,	30	15		Fair,	Shafting guarded, and time notices posted,	Complied.

DISTRICT No. 6, ... D. W. Hammond, *Inspector.*

City of Fall River.							
Dubois Lithograph Co.,	Lithographs,	12	2	1	Good,	None,	–
James Marshall Hat Factory,	Hats,	200	50	8	Fair,	Time notice, certificate for minor,	Complied.
Fall River Shoe Co.,	Boots and shoes,	25	10	4	Fair,	Time notice, certificate for minor,	Complied.
Troy Machine Co.,	Textile machinery,	4	–		Good,	None,	–
J. H. Estes Mill,	Wrapping twine,	29	30	2	Fair,	None,	–

American Linen Co. Mill, No. 2,	Print cloths,	170	325	–	28	Good,	None,	–
Crescent Mills,	Fancy woven goods,	230	125	2	16	Good,	None,	–
Wampanoag Mill, No. 1,	Print cloths and odd goods,	137	192	1	11	Good,	None,	–
Wampanoag Mill, No. 2,	Print cloths and odd goods,	132	189	–	6	Good,	None,	–
Metacomet Manufacturing Co.,	Print cloths and odd goods,	99	236	–	16	Good,	None,	–
Durfee Mill, No. 1,	Print cloths and wide goods,	220	300	3	17	Good,	None,	–
Durfee Mill, No. 2,	Print cloths and wide goods,	185	295	–	26	Good,	None,	–
Durfee Mill, No. 3,	Print cloths and wide goods,	80	120	–	8	Good,	None,	–
Merchants' Mfg. Co., No. 1,	Print cloths and odd goods,	122	263	4	26	Good,	None,	–
Merchants' Mfg. Co, No. 2,	Print cloths and odd goods,	119	246	3	10	Good,	None,	–
Granite Mills, No. 1,	Print cloths and odd goods,	186	198	5	27	Good,	None,	–
Granite Mills, No. 2,	Print cloths and odd goods,	186	219	6	34	Good,	To put one rope on each elevator,	Complied.
Troy Cotton and Woollen Manufacturing Co.,	Print cloths and odd goods,	189	186	1	5	Good,	None,	–
Barnard Manufacturing Co.,	Print cloths and odd goods,	150	250	2	15	Good,	None,	–
Stafford Mills,	Print cloths,	140	280	3	14	Good,	None,	–
American Printing Co,	Printed goods,	570	68	3	51	Good,	Time notice,	Complied.

DISTRICT No. 6 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	NUMBER EMPLOYED.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
City of Fall River — Continued.								
P. Adam,	Coats, pants and vests,	2	7	–	–	Good,	Time notice, extra water closet,	Complied.
Advance Office,	Newspapers,	3	4	–	3	Good,	Time notice, and certificates,	Complied.
R S Reed & Co.,	Furniture dealers,	17	–	–	–	Good,	None,	–
Henry W. Dyson,	Reeds,	8	–	–	–	Good,	None,	–
W. E. McLain & Co.,	Loom harness,	22	10	–	2	Good,	Time notice,	Complied.
Tecumseh Mills, No. 1,	Print cloths and odd goods,	76	126	–	10	Good,	None,	–
Tecumseh Mills, No. 2,	Print cloths and odd goods,	61	147	–	15	Good,	None,	–
Davol Mills,	Odd goods,	152	298	–	17	Good,	None,	–
John F. Nichols,	Cotton yarn,	12	22	1	5	Good,	None,	–
Robeson Mills,	Print cloths,	72	153	–	8	Good,	None,	–
Union Cotton Mfg. Co., No. 2,	Print cloths and wide goods,	140	160	3	13	Good,	None,	–
Union Cotton Mfg. Co., No. 3,	Print cloths and wide goods,	111	219	–	20	Good,	None,	–
Fall River Manufactory,	Print cloths,	112	168	1	10	Good,	None,	–
Seaconnet Mills,	Print cloths,	162	238	1	21	Good,	None,	–
Flint Mills,	Cotton goods to order,	201	299	4	13	Good,	None,	–
American Linen Co. Mill, No. 1,	Print cloths,	160	330	5	31	Good,	None,	–

American Linen Co. Mill, No 2,	Print cloths, . .	170	325		28	Good, .	None, ...		–
Crescent Mills, ...	Fancy woven goods, . .	250	125	2	16	Good, .	None, ...		–
Wampanoag Mill, No. 1, . .	Print cloths and odd goods, .	137	192	1	11	Good, .	None, ...		–
Wampanoag Mill, No. 2, . .	Print cloths and odd goods, .	132	189		6	Good, .	None, ...		–
Metacomet Manufacturing Co., .	Print cloths and odd goods, .	99	236		6	Good, .	None, ...		–
Durfee Mill, No. 1, . . .	Print cloths and wide goods, .	220	300	3	17	Good, .	None, ...		–
Durfee Mill, No. 2, . . .	Print cloths and wide goods, .	185	295		26	Good, .	None, ...		–
Durfee Mill, No. 3, . . .	Print cloths and wide goods, .	80	120		8	Good, .	None, ...		–
Merchants' Mfg. Co, No. 1, .	Print cloths and odd goods, .	122	263	4	26	Good, .	None, ...		–
Merchants' Mfg. Co, No. 2, .	Print cloths and odd goods, .	119	246	3	10	Good, .	None, ...		–
Granite Mills, No. 1, . . .	Print cloths and odd goods, .	186	198	5	27	Good, .	None, ...		–
Granite Mills, No. 2, . . .	Print cloths and odd goods, .	186	219	6	34	Good, .	To put one rope on each elevator, .		Complied.
Troy Cotton and Woollen Manufacturing Co., ...	Print cloths and odd goods, .	189	186	1	5	Good, .	None, ...		–
Barnard Manufacturing Co., .	Print cloths and odd goods, .	150	250	2	15	Good, .	None, ...		–
Stafford Mills, ...	Print cloths, . .	140	280	3	4	Good, .	None, ...		–
American Printing Co, . .	Printed goods, .	570	68	3	51	Good, .	Time notice, ...		Complied.

DISTRICT NO. 5 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured	NUMBER EMPLOYED. Males.	Females.	Under 14.	14 to 16.	Sanitary Condition	Orders Given.	Compliances.
HUBBARDSTON.								
Eagle Woollen Mill,	Satinets,	19	9	–	2	Fair,	Time notices posted,	Complied.
CLINTON.								
Lancaster Mills,	Ginghams,	961	961	7	149	Good,	Crank to engine and main shaft guarded,	Complied.
Bigelow Carpet Co,	Carpets and carpet yarns,	500	500	–	67	Good,	Cranks and fly-wheel and shaft guarded and elevator repaired,	Complied.
Clinton Wire Cloth Co,	Wire cloth and screens,	225	125	1	23	Good,	Time notices posted,	Complied.
Gibbs Loom, Harness & Reed Co.,	Reeds,	35	15	–	–	Fair,	Time notices posted and water-closets designated,	Complied.
J. B. Parker Machine Co,	Woollen mach'ry,	49	–	–	–	Fair,	None,	–
DUDLEY.								
John Chase & Co.,	Cassimeres,	250	150	–	20	Good,	None,	–
Eben S. Stevens,	Satinets and jute twine,	27	53	–	7	Fair,	Driving belt guarded,	Complied.
William J. Warren,	Paper,	12	1	–	–	Fair,	None,	–
L. D. Perry Mill,	Woollen yarns,	22	3	–	–	Fair,	Driving belt guarded & time notices,	Complied.
Josiah Perry Mill,	Fancy cassimeres,	63	62	–	14	Fair,	None,	–
Stephens' Linen Works,	Linen crashes,	181	209	10	53	Fair,	None,	–

Mill, No 2,	Print cloths, Fancy woven goods,	170	325	—	28	Good,	None,						—
Mill, No. 1,	Print cloths and odd goods,	250	125	2	16	Good,	None,						—
Mill, No. 2,	Print cloths and odd goods,	137	192	1	11	Good,	None,						—
Manufacturing Co.,	Print cloths and odd goods,	132	189	—	6	Good,	None,						—
No. 1,	Print cloths and wide goods,	99	236	—	16	Good,	None,						—
No. 2,	Print cloths and wide goods,	220	300	3	17	Good,	None,						—
No. 3,	Print cloths and wide goods,	183	205	—	26	Good,	None,						—
Mfg. Co., No. 1,	Print cloths and wide goods,	80	120	—	8	Good,	None,						—
Merchants' Mfg. Co., No. 2,	Print cloths and odd goods,	123	263	4	26	Good,	None,						—
Granite Mills, No. 1,	Print cloths and odd goods,	119	246	3	10	Good,	None,						—
Granite Mills, No. 2,	Print cloths and odd goods,	186	198	5	27	Good,	None,						—
Troy Cotton and Woollen Manufacturing Co.,	Print cloths and odd goods,	186	210	6	34	Good,	To put one rope on each elevator,						Complied.
Bernard Manufacturing Co.,	Print cloths and odd goods,	189	186	1	6	Good,	None,						—
Salford Mills,	Print cloths,	150	250	2	15	Good,	None,						—
American Printing Co.,	Printed goods,	570	280	3	14	Good,	None,						—
			68	3	51	Good,	Time notice,						Complied.

DISTRICT No. 6 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
City of Fall River— Continued.								
Fall River Bleachery,	Bleached cotton goods,	150	15	–	6	Good,	None,	–
F. R. Spool & Bobbin Co.,	Spools and bobbins,	80	–	–	5	Good,	None,	–
Shove Mills,	Print cloths,	263	237	4	32	Fair,	None,	–
Slade Mills,	Print cloths,	176	250	1	14	Fair,	None,	–
Laural Lake Mills,	Print cloths and orders,	160	190	–	16	Good,	None,	–
Osborn Mills, No. 1,	Print cloths and orders,	218	235	3	14	Good,	None,	–
Osborn Mills, No. 2,	Cambric, lawns, etc,	154	202	–	7	Good,	None,	–
King Philip Mills,	Fine goods, lawns, etc,	380	570	2	17	Good,	None,	–
Globe Yarn Mills, No. 1,	Cotton yarn,	82	168	2	23	Good,	Time notice,	Complied.
Globe Yarn Mills, No. 2,	Cotton yarn,	77	173	2	23	Good,	Time notice,	Complied.
Globe Yarn Mills, No. 3,	Cotton yarn,	97	103	1	12	Good,	Time notice,	Complied.
Conanicut Mills,	Wide cotton goods,	72	90	1	14	Good,	None,	–
Wyoming Mills,	Carpet warps, battings, etc.,	50	135	–	7	Fair,	None,	–
Barnaby Manufacturing Co.,	Ginghams,	197	198	1	23	Good,	None,	–
Chase Mills,	Print cloths and wide goods,	250	250	5	29	Good,	None,	–

Pocasset Mfg. Co. Mill, No. 1, .	Sheetings and wide goods, . .	122	128	–	9	Good, .	None, ...	–
Pocasset Mfg. Co. Mill, No. 2, .	Sheetings and wide goods, . .	127	123	–	11	Good, .	None, ...	–
Pocasset Mfg. Co Mill, No. 3, .	Sheetings and wide goods, . .	102	98	–	4	Good, .	None, ...	–
Border City Mfg. Co. Mill, No. 1,	Print cloths and wide goods, .	198	169	7	20	Good, .	Post labor notice, procure school certificates, ...	Complied.
Border City Mfg. Co. Mill, No. 2,	Print cloths and wide goods, .	211	188	6	25	Good, .	None, ...	–
Saganore Manufacturing Co., .	Print cloths and wide goods, .	150	300	3	27	Good, .	None, ...	–
Narragansett Mills, . . .	Print cloths and corset jeans, .	160	165	7	17	Good, .	None, ...	–
Mechanics' Mills, ...	Print cloths and wide goods, .	253	248	16	41	Good, .	None, ...	–
Weetamoe Mills, ...	Print cloths and odd counts, .	208	163	4	21	Good, .	None, ...	–
Quequechan Mills, . . .	Print cloths and trail yarns, .	58	95	–	9	Good, .	None, ...	–
Union Cotton Mfg. Co., No. 1, .	Print cloths and wide goods, .	139	171	–	11	Good, .	None, ...	–
American Supply Co, . . .	Loom harnesses, .	4	8	–	–	Good, .	None, ...	–
Union Belting Co., . . .	Belts and top roll covers, . .	20	2	–	–	Good, .	None, ...	–
Eddy Manufacturing Co., . .	Woollen goods, .	114	52	–	–	Good, .	To guard belt in third story, . .	Complied.
Massasoit Manufacturing Co, .	Cotton battings, .	58	52	–	1	Fair, .	None, ...	–
A. M. Chapin, ...	Paper boxes, .	2	8	–	1	Good, .	None, ...	–
C. M. G. Frapree, . . .	Paper boxes, .	1	11	–	1	Good, .	Post labor notice, certificates, . .	Complied.
C. M. G. Frapree, . . .	Book bindery, .	1	3	–	1	Good, .	Post labor notice, certificates, . .	Complied.

DISTRICT NO. 6 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	NUMBER EMPLOYED.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
City of Fall River — Concluded.								
Annawan Mills,	Print cloths,	35	70			Good,	Post labor notice,	Complied.
Richard Borden Mfg. Co.,	Cotton odd goods,	174	251	2	2	Good,	Certificates,	Complied.
C. M. G. Frapvee,	Paper cop tubes,	5	–		2	Good,	Time notice,	Complied.
Covel & Osborn,	Cotton bands,	11	2		5	Fair,	Time notice, certificate, extra water closet,	Complied.
Covel Machine Co.,	Steam engines, etc.,	17	–			Fair,	None,	–
Charles F. Hill,	Roll covers,	9	3			Good,	One extra water closet,	Complied.
George Congdon,	Fancy cottons,	–	6			Good,	None,	–
Fall River Laundry,	Laundry,	25	45		4	Good,	None,	–
Kilborn, Lincoln & Co.,	Machinery,	160	–			Good,	None,	–
H. G. Langley,	Reeds and harness,	10	6			Good,	Time notice,	Complied.
Small Bros.,	Cotton banding,	16	–			Good,	Guard hatchway,	Complied.
E. S. Brown & Co.,	Dry goods,	25	25		2	Good,	Time notice, designate closets,	Complied.
Frank Sargent,	Dry goods,	19	5			Good,	Time notice, designate closets,	Complied.
Eagle Stove Foundry Co.,	Stoves,	22	–			Fair,	None,	Complied.
R. A. McWhire & Co.,	Dry goods,	36	27	1	2	Good,	Certificates for minors,	Complied.
Stuart & Hamerton,	Dry goods,	12	7			Good,	Time notice, designate closets,	Complied.
Granite City Soap Co.,	Soap,	13	12		5	Good,	Certificates for minors,	Complied.
SANDWICH.								
Sandwich Card & Tag Co.,	Cards and tags,	2	3		1	Good,	Post time notice, procure certificate,	Complied.

Charles W. Spurr Co.,	Veneers and wood carvings,	57	18	–	–	Good,	Post time notice,	Complied.
Cape Cod Rubber Co.,	Gossamer goods,	4	8	–	–	Good,	Post time notice,	Complied.
FREETOWN.								
Crystal Spring Bleaching & Dyeing Co.,	Bleaching and dyeing cotton,	85	15	–	2	Fair,	Post time notice, procure certificates,	Complied.
NORTH ATTLEBOROUGH.								
Gold Medal Braid Co.,	Braids and fishlines,	10	65	–	3	Good,	None,	–
B. S. Freeman & Co.,	Jewelry,	15	10	–	–	Good,	Post time notice,	Complied.
E. S. Mason,	Jewelry,	15	2	–	1	Good,	Post time notice,	Complied.
E. Whitney,	Jewelry,	20	20	–	–	Good,	None,	–
J. F. Sturdy & Sons,	Jewelry,	18	17	–	–	Good,	None,	–
Solomon Davidson,	Jewelry,	26	9	–	–	Good,	None,	–
Standley Bros.,	Jewelry,	17	8	–	–	Good,	None,	–
W. G. Clarke & Co.,	Jewelry,	23	2	–	–	Good,	None,	–
W. D. Fisher & Co.,	Jewelry,	26	14	–	–	Good,	None,	–
R. F. Simmons,	Jewelry,	100	35	–	–	Good,	None,	–
D. F. Briggs,	Jewelry,	20	15	–	–	Good,	None,	–
D. Evans & Co.,	Gilt buttons,	4	–	–	–	Good,	None,	–
G. H. Blackinton,	Jewelry and novelties,	10	5	–	–	Good,	None,	–
J. E. Draper & Co.,	Jewelry,	25	–	–	–	Good,	None,	–
Frank Mauser & Co.,	Silverware,	22	1	–	–	Good,	Time notice,	Complied.
T. G. Frothingham,	Jewelry,	15	–	–	–	Good,	None,	–
F. C. Somes,	Jewelry,	15	5	–	–	Good,	None,	–
A. H. Bliss & Co.,	Watch chains,	7	2	–	–	Good,	Time notice,	Complied.
Demarest & Brady,	Jewelry,	20	3	–	–	Good,	Designate water closets,	Complied.

DISTRICT No. 6 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
North Attleborough — Concluded.								
Frank Whitney & Son,	Silverware,	50	4	–	–	Good,	–	Complied.
J. G. Cheever & Co.,	Watch chains,	28	10	–	–	Good,	None,	–
Bugbee & Niles,	Solid gold jewelry,	20	4	–	–	Good,	None,	–
E. C. Franklin & Co.,	Jewelry,	60	3	–	–	Good,	None,	–
Young & Stearns,	Watch chains,	40	5	–	–	Good,	None,	–
F. S. Gilman,	Jewelry,	15	1	–	–	Good,	Designate water closet,	Complied.
S. E. Fisher & Co.,	Jewelry,	75	6	–	–	Good,	Designate water closet,	Complied.
Sandland, Capron & Co.,	Jewelry,	40	3	–	–	Good,	Designate water closet,	Complied.
E. A. Bliss & Co.,	Jewelry,	70	11	–	1	Good,	None,	–
G. K. Webster & Co.,	Jewelry,	35	4	–	2	Good,	Designate water closets,	Complied.
R. Blackinton & Co.,	Jewelry,	75	12	–	–	Good,	None,	–
D. E. Codding & Co.,	Jewelry,	25	6	–	–	Good,	None,	–
Thomas Totton & Co.,	Jewelry,	38	12	–	–	Good,	None,	–
Clark & Coombs,	Jewelry,	13	9	–	–	Good,	None,	–
Adamsdale Mill,	Cotton yarn,	20	30	4	8	Good,	Procure certificates,	–
TISBURY.								
R. W. Crocker,	Harnesses,	53	7	–	–	Good,	Post time notice,	Complied.
WEST DENNIS.								
West Dennis Tack & Nail Factory,	Tacks and nails,	5	1	–	–	Good,	None,	–
Casey Bros. Shoe Manuf'g Co.,	Shoes,	100	20	–	3	Good,	Procure certificates,	Complied.

PROVINCETOWN.							
Puritan Shirt Factory,	Shirts,	6	154	–	7	Good,	Post time notice, procure certificates,	Complied.
S. S. Swift's Canning Factory,	Canned goods,	17	8	–	–	Fair,	Post time notice,	Complied.
L. Pickert & Co.,	Canned fish,	13	12	–	–	Fair,	Post time notice,	Complied.
NORTH EASTON.							
Rice & Hutchings,	Boots and shoes,	250	50	–	5	Good,	Guard belt in cutting room,	–
Oliver Ames & Sons Corporation,	Shovels, spades and scoops,	350	–	–	–	Fair,	Post time notice,	–
NORTH DIGHTON.							
Mount Hope Mills,	Cotton yarns,	25	50	–	17	Good,	Designate water closets,	Complied.
L. Lincoln & Co.,	Paper,	22	–	–	–	Fair,	None,	–
Dighton Furnace Co.,	Furnaces, stoves and soil pipe,	119	1	–	–	Fair,	None,	–
NORTON.							
Barrowsville Mill,	Cotton yarns,	40	60	1	4	Good,	Procure certificates,	Complied.
MANSFIELD.							
Rumsey Bros.,	Boots and shoes,	75	60	–	9	Good,	Post time notice, procure certificates,	–
Comey & Co,	Straw goods,	400	300	–	–	Good,	Post time notice, designate water closets,	–
D. S. Spaulding,	Jewelry,	80	20	–	1	Good,	None,	–
CITY OF NEW BEDFORD.							
Mt. Washington Glass Co.,	Glassware,	215	10	–	10	Good,	Designate water closets, time notice,	Complied.
Pairpoint Manufacturing Co.,	Silver-plated ware,	275	25	–	15	Good,	Designate water closets, time notice, guard belt in polishing room,	Complied.
Coffin Bros.,	Paper boxes,	4	16	–	–	Good,	Time notice,	Complied.
ATTLEBOROUGH.							
Daggett & Clapp,	Jewelry,	42	23	–	–	Good,	None,	–

DISTRICT No. 6 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
Attleborough — Concluded.								
E. C. Glines,	Engraver,	20	–	–	–	Good,	None,	–
W. H. Wilmarth & Co.,	Jewelry,	49	51	–	–	Good,	None,	–
J. M. Fisher & Co.,	Jewelry,	28	12	–	–	Good,	None,	–
C. R Harris,	Jewelry,	24	6	–	–	Good,	None,	–
Tappan, Berry & Co.,	Jewelry,	20	10	–	–	Good,	Time notice,	Complied.
S. W. Gould & Co,	Jewelry,	53	12	–	–	Good,	Designate water closets,	Complied.
E. A. Potter & Co.,	Jewelry,	14	1	–	–	Good,	None,	–
Hebron Mills,	Cotton goods,	113	142	–	23	Good,	Certificates,	Complied.
Dodgeville Mills,	Sheetings,	105	195	1	23	Good,	None,	–
Mechanics' Mills,	Print cloths and sheetings,	49	52	–	7	Good,	Certificates, time notice, designate closets,	Complied.
Watson, Newell & Co.,	Jewelry,	66	38	–	3	Good,	Time notice, designate closets,	Complied.
A Bushee & Co.,	Jewelry,	35	25	–	–	Good,	Designate water closets,	Complied.
Horton, Angell & Co.,	Jewelry,	100	50	–	–	Good,	Designate water closets,	Complied.
W. D. Wilmarth & Co.,	Coffin trimmings,	13	12	–	–	Good,	Time notice,	Complied.
Streeter Bros.,	Watch chains,	7	11	–	–	Good,	None,	–
E. A Robinson,	Jewelry,	8	2	–	–	Good,	None,	–
Marsh & Bigney,	Jewelry,	20	10	–	–	Good,	None,	–
Bliss Bros,	Jewelry,	34	4	–	–	Good,	None,	–
Regnell, Bigney & Co.,	Jewelry,	15	5	–	–	Good,	None,	–
J. W. Luther & Co.,	Imitation stones,	4	–	–	–	Good,	None,	–

Smith & Crosby,	Jewelry,	22	5	–	–	Good,	Time notice,	Complied.
F. H. Sadler & Co,	Jewelry,	6	6	–		Good,	None,	–
F. W. Weaver & Co,	Jewelry,	13	5	–	–	Good,	Time notice,	Complied.
Wharton, Richards & Co.,	Jewelry,	12	–	–	–	Good,	None,	–
Lindsey & Inman,	Jewelry,	8	2	–	–	Good,	None,	–
Bates & Baron,	Jewelry,	85	3	–	–	Good,	None,	–
W. S Blackinton,	Jewelry,	105	25	–	–	Good,	None,	–
Smith, Carpenter & Co,	Coffin trimmings,	7	8	–	–	Good,	Safety device on elevator, time notice,	Complied.
Cummings & Wexel,	Jewelry,	38	12	–	–	Good,	Separate water closets,	Complied.
Bates Button Co,	Buttons,	30	10	–	–	Good,	Designate water closets,	Complied.
Short, Nerney & Co,	Jewelry,	37	13	–	–	Good,	Designate water closets,	Complied.
Westport.								
Westport Mfg. Co. Mill, No. 1,	Cotton battings and twines,	46	53	–	5	Fair,	None,	–
Westport Mfg. Co. Mill, No. 2,	Cotton battings and twines,	28	28	–	3	Fair,	None,	–
Orleans.								
Cummings & Howes,	Coats, pants and vests,	120	60	–	–	Good,	Time notice,	Complied.
Snow's Factory,	Coats, pants and vests,	20	10	–	–	Good,	Time notice,	Complied.
Fairhaven.								
Fairhaven Iron Foundry,	Iron castings,	36	–	–	–	Fair,	Guard fly-wheel,	Complied.
American Tack Co.,	Tacks and nails,	77	38	–	–	Good,	Time notice, guard belt to chopper,	Complied.
City of New Bedford.								
Acushnet Mills, No. 1,	Sateens & ordered goods,	247	221	5	41	Good,	None,	–

DISTRICT No. 6 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females	Under 16.	16 to 18.			
City of New Bedford — Concluded.								
Acushnet Mills, No 2,	Sateens & ordered goods,	235	213	–	29	Good,	None,	–
Howland Mills,	Cotton yarns,	66	134	1	28	Good,	None,	–
Potomska Mills, No. 1,	Cotton goods,	204	398	5	46	Good,	None,	–
Potomska Mills, No. 2,	Cotton goods,	256	438	8	51	Good,	None,	–
New Bedford Mfg. Co. Mill, No. 1,	Cotton yarns,	71	81	–	17	Good,	None,	–
New Bedford Mfg Co. Mill, No. 2,	Cotton yarns,	85	73	5	23	Good,	None,	–
Hathaway, Soule & Harrington,	Boots and shoes,	224	56	–	6	Good,	None,	–
Grinnell Mills,	Cotton goods,	325	348	2	59	Good,	None,	–
Morse Twist Drill Co.,	Steel-cutting tools,	215	35	–	–	Good,	None,	–
T. M Dunham & Bros.,	Shirts,	10	130	–	5	Good,	None,	–
Oneko Mills,	Dress goods,	80	85	1	9	Good,	None,	–
City Manufacturing Co.,	Cotton yarns,	68	89	1	17	Good,	Time notice,	Complied.
Wamsutta Mills, No 1,	Cotton varieties,	150	195	7	20	Good,	None,	–
Wamsutta Mills, No. 2,	Cotton varieties,	188	156	–	21	Good,	None,	–
Wamsutta Mills, No 3,	Cotton varieties,	212	172	–	21	Good,	None,	–
Wamsutta Mills, No. 4,	Cotton varieties,	150	232	15	30	Good,	Certificates,	Complied.
Wamsutta Mills, No. 5,	Cotton varieties,	183	207	2	34	Good,	None,	–
Wamsutta Mills, No. 6,	Cotton varieties,	181	224	2	34	Good,	Certificates,	Complied.
Charles Taber & Co.,	Frames and mouldings,	150	–	–	4	Good,	None,	–
Charles Taber & Co.,	Art products,	82	38	–	–	Good,	None,	–

Tinkham, Reed & Gifford,	Boots and shoes,	24	12	–	–	Good,	Time notice, designate closets,	Complied.
Pierce & Bushnell,	Frames, mouldings, etc,	65	25	–	6	Good,	Certificates, designate closets,	Complied.
New Bedford Cordage Co.,	Cordage,	248	12	–	9	Good,	Time notice, safety device on elevator,*	Complied.
CITY OF TAUNTON.								
H. L. Cushman & Co.,	Buttons,	15	13	–	–	Fair,	None,	–
Canoe River Mills,	Cotton yarns,	40	90	1	11	Good,	Time notice, certificates,	Complied.
W. R. Potter Mills,	Hosiery yarns,	20	10	–	7	Good,	Time notice,	Complied.
Cohannet Mills,	Hosiery yarns,	106	110	5	22	Good,	None,	–
Elizabeth Poole Mills,	Cotton flannel, ticking, etc.,	60	120	3	13	Good,	Certificates,	Complied.
Eagle Mills,	Print cloths,	33	69	–	13	Good,	Certificates,	Complied.
Whittenton Mills,	Colored cottons,	497	579	–	100	Good,	None,	–
Reed & Barton Corporation,	Silver-plated ware,	435	65	–	2	Good,	Time notice, certificates,	Complied.
Hopewell Mills,	Print cloths & jeans,	50	95	3	1	Fair,	Certificate, guard main belt in machine shop,	Complied.
City Square Steam Laundry,	Laundry,	3	15	–	2	Good,	Time notice, certificates, belt to guard, designate closets,	Complied.
Taunton Steam Laundry,	Laundry,	3	27	–	–	Good,	Time notice, designate closets,	Complied.
Mason Machine Works,	Locomotives, printing presses, etc.,	900	–	–	2	Fair,	None,	–
Taunton Locomotive Mfg. Co.,	Locomotives, printing presses, etc.,	350	–	–	–	Fair,	None,	–
Taunton Copper Mfg. Co.,	Copper sheathing, etc,	100	–	–	–	Fair,	Safety device on elevator,	Complied.
Phenix Manufacturing Co.,	Crucibles and stove polish,	20	–	–	–	Fair,	None,	–

* Elevator discontinued.

DISTRICT No. 6 — *Concluded.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
City of Taunton— Concluded.								
Taunton Tack Co.,	Tacks and nails,	80	20	–	7	Good,	None,	–
A Field Tack Co., No. 1 Mill,	Tacks and nails,	110	40	–	6	Good,	Time notice, designate closets,	Complied.
A. Field Tack Co, No. 2 Mill,	Tacks and nails,	48	2	–	2	Good,	Time notice, designate closets,	Complied.
Oakland Mills,	Cotton goods,	48	72	5	13	Good,	None,	–
M. M Rhodes' Sons' Co,	Buttons,	25	25	–	–	Good,	None,	–
New Process Twist Drill Co,	Drills,	19	1	–	1	Good,	Time notice,	Complied.
Westville Mills,	Cotton yarns,	80	35	–	6	Good,	Time notice, designate closets,	Complied.
H A. Williams Mfg. Co.,	Oil cans, awls, tacks, etc.,	20	15	–	–	Good,	Time notice,	–
Emery & Holmes,	Ladies' boots and shoes,	75	25	–	–	Good,	Time notice, guard balance wheel to engine, guard on roll mill,	Complied.

DISTRICT No. 7, ... **JOHN L. KNIGHT,** *Inspector.*

CITY OF SPRINGFIELD.								
C. C Taylor & Co.,	Paper boxes,	4	7	–	–	Fair,	None,	–
Bay State Corset Co,	Corsets,	40	160	–	5	Good,	Water closets to be designated,	Complied.
Dickinson Hard Rubber Co.,	Buttons,	50	50	–	21	Good,	None,	–
Smith & Lesqueraux,	Spectacles,	27	2	–	1	Fair,	Legal notices to be posted,	Complied.

L. W. Brown & Co.,	Paper boxes,	10	45	–	2	Fair,	Certificates to be filed,	Complied.
B. & A. R. R. Blocks,	Four buildings, manufactories and stores,	55	–	–	–	Good,	Protect openings to elevator wells,	Complied.
Steere & Turner,	Organs,	24	–	–	1	Good,	Certificate to be filed,	Complied.
Brackett Paper Co.,	Paperies,	3	27	–	–	*–	Better sanitary arrangements,	†–
E. Kieler & Son,	Knit goods,	2	25	–	–	*–	Water closets separated and designated, legal notices posted, outside doors to be kept unlocked,	†–
Davis Level Tool Co,	Tools,	12	–	–	2	Good,	Certificates to be filed,	Complied.
Cheney Bigelow Wire Works,	Wire cloth, etc,	33	7	–	3	Good,	None,	–
Smith & Wesson,	Pistols,	550	–	–	–	Good,	Legal notices to be posted,	Complied.
T. M Walker & Co,	Sashes and blinds,	40	–	–	–	Fair,	Protect elevator openings,	Complied.
Blair Manufacturing Co,	Lawn mowers,	16	–	–	1	Good,	Post legal notices, certificate to be filed,	Complied.
Springfield Cigar Mfg. Co.,	Cigars,	40	35	–	–	Good,	None,	–
J. Duckworth,	Sewing machine parts,	14	–	1	1	Good,	Post legal notices,	Complied.
Springfield Shoe Co.,	Shoes,	35	30	–	1	Fair,	Better sanitary arrangements, post legal notices,	Complied.
Springfield Weaving Co.,	Tapes & bindings,	7	48	–	2	*–	Better sanitary arrangements,	Complied.
Warren S. Rogers,	Button parts,	24	6	–	–	Fair,	Designate water closets, post legal notices,	Complied.
N. W. Merrill,	Paper boxes,	2	13	–	1	Good,	Post legal notices,	Complied.
Meddlicott, Morgan & Co,	Knit goods,	20	60	–	5	Good,	Guard shafting and pulleys under sewing tables, designate water-closets,	Complied.
Chicopee Folding Box Co.,	Paper boxes,	14	3	–	1	Good,	Designate water closets,	Complied.
Weaver, Shipman & Co.,	Printing,	20	4	–	2	Fair,	Better sanitary arrangements, certificates to be filed, post legal notices,	Complied.

* Not good. † Out of business.

DISTRICT NO. 7 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	NUMBER EMPLOYED.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
City of Springfield — Continued.								
Holyoke Glazed Paper & Card Co.,	Glazed paper, .	56	14	–	2	Good, .	Designate water-closets, ...	Complied.
Chapman Valve Mfg. Co., . .	Valves & hydrants,	195	1	–	2	Good, .	Post legal notices, file certificates, .	Complied.
J. S. Carr & Co., ...	Crackers, etc., .	21	–	–	5	Good, .	Post legal notices, protect elevator openings, guard hatchways by railing, ...	Complied.
Max Lutz, ...	Malt liquors, .	12	–	–	–	Fair, .	Protect elevator openings, repair safety device to elevator, . .	Complied.
Charles C. Marshall, . . .	Wood turning, .	8	–	–	–	Fair, .	None, ...	–
William Fernald, . . .	Wood turning, .	4	–	–	–	*–	Better sanitary arrangements, . .	Complied.
Shea Brothers, ...	Coating paper, .	4	–	–	–	Fair, .	Guard gears on paper machine, .	Complied.
Martin's Shoddy Mill, . . .	Waste, . . .	3	–	–	–	Bad, .	Shafting running machinery to be guarded, ...	Complied.
Kibbe Brothers, ...	Confectionery, .	31	12	–	4	Good, .	Designate water closets, . . .	Complied.
P. J. O'Connell & Son, . .	Coppersmith and brass foundry, .	17	–	–	–	Good, .	Protect elevator openings, post legal notices, ...	Complied.
Springfield Printing and Binding Co., ...	Bookbindery and printing, . .	66	26	–	–	Good, .	Designate water closets, . . .	Complied.
Charles Van Vlack, . . .	Electrotyping, .	6	–	–	–	Good, .	None, ...	–
William Simpson, . . .	Cigars, . . .	18	12	–	–	Good, .	Designate water closets, . . .	Complied.
Joseph Whitcomb, . . .	Cigars, . . .	43	12	–	–	Good, .	None, ...	–

A. H. Goetting,	Music and stationery,	4	1	–	1	Good,	None,	–
William H. Wright,	Cigars,	22	8	–	–	Good,	Post legal notices,	Complied.
Gilbert & Barker Mfg Co,	Gas machines,	35	–	–	–	Good,	None,	–
Kallnbach & Guisel,	Brewery,	15	–	–	–	Fair,	None,	–
New England Cigar Co.,	Cigars,	13	9	–	–	Good,	None,	–
E. Stebbins Manufacturing Co.,	Brass goods,	100	–	–	–	Good,	None,	–
Bullard Arms Co,	Rifles and shot guns,	8	–	–	–	Good,	Post legal notices,	Complied.
Hampden Narrow Fabric Co.,	Cotton and silk goods,	4	16	–	–	Good,	None,	–
Hampden Paint and Chemical Co.,	Paints,	12	1	–	–	Good,	None,	–
Springfield Envelope Co.,	Envelopes,	15	50	–	20	Good,	Post legal notices, water closets designated, certificates to be filed,	Complied.
Excelsior Steam Laundry,	Laundry,	6	14	–	–	Good,	Water closets designated,	Complied.
Holt Manufacturing Co.,	Hardware specialties,	7	–	–	–	Good,	Protect elevator openings,	Complied.
M. Goodale,	Planing mill,	18	–	–	–	Good,	None,	–
Barney & Berry Skate Co.,	Skates,	100	–	–	–	Good,	Post legal notices,	Complied.
M. H. Barnett,	Cigars,	18	6	–	–	Fair,	Post legal notices, better sanitary arrangements,	Complied.
C. B. Wells & Co,	Printing,	6	–	–	–	Fair,	None,	–
Springfield Braid Co,	Silk mohair braid,	2	2	–	–	Good,	None,	–
P. C. Colby Manufacturing Co.,	Paper ruling and gilding,	8	3	–	–	Fair,	Post legal notices,	Complied.
National Needle Co,	Needles,	132	65	1	24	Good,	None,	–
Smith & Abby,	Cop'er pumps, etc.,	10	–	–	–	Fair,	None,	–
Springfield Wood Working Co,	Woodwork,	56	–	–	–	Good,	None,	–
Fisk Manufacturing Co.,	Soap,	22	1	–	–	Good,	None,	–
Morgan Envelope Co.,	Envelopes,	62	92	–	18	Good,	None,	–
National Papeterie Co.,	Papeteries,	–	–	–	–	Fair,	None,	–

* Not good.

DISTRICT No. 7 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.			Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14. / 14 to 16.			
City of Springfield — Concluded.							
Springfield Glue and Emery Wheel Co.,	Emery wheels,	75	3	–	Good,	None,	–
Milton Bradley Co.,	Lithograph paper,	86	14	7	Good,	None,	–
Towne & Fuller,	Cigars,	45	34	–	Fair,	None,	–
Cutler & West,	Wooden boxes,	30	2	4	Good,	Legal notices to be posted,	Complied.
New England Card & Paper Co.,	Glazed paper and cardboard,	17	–		Good,	None,	–
Warwick Cycle Mfg. Co.,	Bicycles,	65	–		Good,	Protect elevator openings, certificates to be filed,	Complied.
Church & Richards,	Cotton warps,	9	2	4	Fair,	Labor notices to be posted,	Complied.
Newell Bros. Mfg. Co.,	Buttons,	–	–		–	–	–
Bemis & Call,	Machine tools,	40	–		Good,	Certificates to be filed,	Complied.
Springfield Waste Co.,	Waste,	35	2		Good,	Legal notices to be posted,	Complied.
Springfield Bindery,	Bookbindery,	16	12		Fair,	None,	–
Tucker & Cook Mfg. Co.,	Cotton yarns,	7	13		Good,	Water closets designated,	Complied.
Mill River Silk Works,	Sewing silk,	4	18	2	Good,	Labor notices posted,	Complied.
Troy Steam Laundry,	Laundry,	5	12		Good,	Post legal notices,	Complied.
C. W. Bullock & Co.,	Jewellers' tools,	20	–		Good,	None,	–
Dwight Print,	Printing,	4	–		Good,	Post legal notices,	Complied.
Birnie Paper Co.,	Papeteries, envelopes, tablets,	10	30	2	Good,	Post legal notices, designate water closets,	Complied.

The Tanter Co.,	Butchers' frocks,	4	14			Fair,	Post legal notices, better sanitary arrangements,	Complied.
United Manufacturing Co.,	Collars and cuffs,	10	–			Good,	None,	–
R. H. Smith Manufacturing Co,	Rubber type foundry,	19	4			Good,	Post legal notices, designate water closets,	Complied.
Taylor Bros.,	Paper boxes,	2	15			Fair,	Post legal notices,	Complied.
Horton Paper Co.,	Papeteries, etc.,	4	4			Fair,	Post legal notices,	Complied.
S. B. Burgess,	Paper boxes,	2	7			Good,	Designate water closets,	Complied.
Merrett Manufacturing Co.,	Typewriters,	20	20			Fair,	Better sanitary arrangements,	–
F. B. Taylor,	Sashes and blinds,	5	–			Good,	Protect elevator openings,	Complied.
The Homestead Co.,	Printing,	85	40			Good,	Designate water closets,	Complied.
J. C Lutz,	Lithographing,	10	–			Good,	Post legal notices,	Complied.
Taylor & Nichols,	Stationers,	17	68			Good,	None,	–
City of Holyoke.								
Farr Alpaca Co.,	Dress goods,	300	333	4	99	Good,	None,	–
Germania Mills,	Woollen goods,	170	150	1	20	Bad,	Better sanitary arrangements, outside and inside doors kept unlocked,	Complied.
Connor Bros, Bigelow St. Mill,	Woollen goods,	22	47	1	3	Fair,	Elevator wells protected, designate water closets,	Complied.
Connor Bros., New York Mill,	Woollen goods,	56	78	6	30	Fair,	None,	–
Beebe, Webber & Co.,	Woollen goods,	100	50	–	5	Good,	None,	–
Hadley Thread Co.,	Cotton thread,	222	487	5	53	Good,	Certificates to be filed,	Complied.
American Pad Co,	Paper blocks,	12	28	–		Good,	None,	–
Holyoke Envelope Co.,	Envelopes,	84	166		9	Good,	None,	–
National Blank Book Co.,	Blank books,	60	90		10	Fair,	None,	–
Whitmore Manufacturing Co.,	Glazed paper,	29	14			Good,	Post legal notices,	Complied.
McCullum & Constable,	Hosiery,	22	11			Good,	Post legal notices,	Complied.
B. F. Nichols,	Belting,	10	–			Good,	None,	–

DISTRICT No. 7 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
City of Holyoke — Continued.								
George W. Prentice & Co.,	Wire goods,	60	–	–	–	Good,	None,	–
William Skinner & Son,	Silk goods,	215	300	3	32	Fair,	None,	–
Massachusetts Screw Co.,	Wood screws,	22	2			Good,	None,	–
J. T. F. McDonald,	Paper finishing,	4	7		1	Good,	Post legal notices,	Complied.
Tuttle Rubber Co.,	Rubber packing,	45	–			Fair,	None,	–
Holyoke Warp Co,	Cotton warps,	58	55	3	21	Fair,	None,	–
Springfield Blanket Co.,	Horse blankets,	198	188	2	26	Fair,	Certificates to be filed, designate water closets,	Complied.
Hampden Glazed Paper Co.,	Cardboard,	44	6			Good,	Gearing to calenders to be guarded,	Complied.
E. Mackintosh & Sons Co,	Cotton goods,	120	–		4	Fair,	Safety device to elevator, elevator openings protected,	Complied.
Connecticut River Paper Co.,	Loft-dried paper,	60	90			Good,	None,	–
T. Keigan & Co.,	Steam heaters,	26	–			Good,	None,	–
Judson & Williams,	Screen plates,	3	–			Fair,	None,	–
E. F. White,	Paper boxes,	14	10			Fair,	Legal notices posted, elevator openings protected, water closets designated,	Complied.
Beebe & Holbrook,	Loft-dried paper,	70	100		2	Good,	Certificates to be filed,	Complied.
Massasoit Paper Co.,	Loft-dried paper,	59	116			Good,	None,	–
Wauregan Paper Co.,	Loft-dried paper,	50	30			Good,	None,	–
Whiting Paper Co., No. 1,	Loft-dried paper,	66	136			Good,	Legal notices posted, designate water closets,	Complied.

Whiting Paper Co., No. 2,	Loft-dried paper,	155	120	–	–*	Good,	Water closets designated,	Complied.
Parsons Paper Co.,	Loft-dried paper,	100	200	–	1	Good,	Certificates to be filed,	Complied.
Riverside Paper Co.,	Writing paper,	81	84	–	–	Good,	Drive pulley in basement to be guarded by railing,	Complied.
George R Dickinson & Co.,	Loft-dried paper,	80	45	–	1	Good,	None,	–
Albion Paper Co.,	Book paper,	136	89	–	4	Fair,	Better sanitary arrangements,	Complied.
Newton Paper Co.,	Sheathing paper,	69	–	–	4	Fair,	Rope to elevator replaced by new, legal notices posted, certificates filed,	Complied.
Chemical Paper Co.,	Manilla paper,	175	5	3	10	Fair,	Elevator wells protected, certificates to be filed, belts to be boxed,	Complied.
Nonotuck Silk Co,	Book paper,	125	50	–	–	Fair,	Designate water closets,	Complied.
Winona Paper Co,	Engine-sized paper,	175	75	–	2	Fair,	Legal notices to be posted,	Complied.
Dickinson & Clark Co,	Book paper,	51	19	–	–	*–	Designate water closets, legal notices posted, guard gears in rear of paper machine, balance wheel to engine protected by railing,	Complied.
Crocker Paper Co,	Colored paper,	47	13	–	–	Good,	Water closets designated,	Complied.
Syms & Dudley,	Writing paper,	100	65	–	2	Fair,	Drive pulley guarded by railing, water closets designated, legal notices posted,	Complied.
Excelsior Paper Co.,	Book paper,	34	16	–	–	Fair,	Railing around crank of engine, legal notices posted,	Complied.
Valley Paper Co.,	Writing paper,	70	130	–	–	Good,	None,	–
Franklin Paper Co,	Envelope paper,	52	23	–	–	Good,	Better sanitary arrangements,	Complied.
Holyoke Paper Co,	Loft-dried paper,	60	155	–	1	Good,	Post legal notices, file certificates,	Complied.
Merrick Thread Co, No. 1,	Thread,	200	550	–	26	Good,	Certificates to be filed,	Complied.
Merrick Thread Co., No. 2,	Thread,	100	150	1	61	Good,	None,	–
Merrick Thread Co., No. 3,	Thread,	61	97	1	28	Good,	None,	–

* Not good.

DISTRICT No. 7 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
City of Holyoke — Concluded.								
Holyoke Paper Box Co.,	Paper boxes,	9	31	–	3	Good,	Post legal notices,	Complied.
Chadwick & Chadwick,	Velour plushes,	53	17	1	8	Good,	Certificates to be filed,	Complied.
F. D. Smith,	Paper ruler,	4	8	–	–	Fair,	Better sanitary arrangements, guard elevator opening,	Complied.
Holyoke Lithograph Co.,	Lithographing,	6	–	–	–	Fair,	None,	–
Holyoke Printing Co.,	Printing,	4	–	–	–	Good,	Post legal notices,	Complied.
City Mill,	Grist mill,	4	–	–	–	Good,	Guard main belts,	Complied.
Buchannan & Co.,	Wire cloth,	45	5	–	4	Good,	Post legal notices, designate water closets,	Complied.
Holyoke Testing Flume Co.,	Testing flumes,	10	–	–	–	Good,	None,	–
Holyoke Machine Co.,	Machinery,	240	–	–	–	Fair,	None,	–
Phelps & Tower's Block,	Repair shop,	12	–	–	–	Good,	Gates to elevator openings repaired,	Complied.
Royce Steam Laundry,	Laundry,	4	4	–	–	Fair,	Post legal notices,	Complied.
Chase & Coldridge,	Repair shop,	5	–	–	–	Good,	Gates to elevator openings repaired,	Complied.
Holyoke Bookbindery,	Bookbinding,	3	3	–	1	Good,	Post legal notices,	Complied.
Connecticut River Lumber Co.,	Saw mill,	125	–	–	–	Fair,	Drive pulley to be guarded by railing,	Complied.
American Lumber Co.,	Stair work and mouldings,	75	–	–	–	Good,	Band saws to be guarded,	Complied.
Smith & White,	Paper ruling,	6	13	–	–	Good,	Post legal notices,	Complied.
Watson, Ealy & Son,	House furnishing goods,	30	–	–	–	Good,	Protect elevator openings,	Complied.
C. H. Smith & Co.,	Dandy rolls,	4	3	–	–	Good,	Post legal notices,	Complied.

Casper Ranger,	Sashes and blinds,	50	–	–	–	Good,	Guard band saws,	Complied.
Dean Steam Pump Works,	Pumps,	200	–	–	–	Good,	None,	–
Holyoke Bar Co.,	Knife bars,	7	–	–	–	Good,	None,	–
Lyman Mills,	Cotton goods,	340	640	93	6	Good,	None,	–
WESTFIELD.								
American Whip Co.,	Whips,	120	30	–	–	Fair,	Better sanitary arrangements,	Complied.
American Cigar Co.,	Cigars,	25	75	–	–	Fair,	Better sanitary arrangements, certificates to be filed,	Complied.
John C Schmidt & Co.,	Whips,	30	10	–	1	Fair,	Water closets designated, post legal notices,	Complied.
Westfield Cigar Co.,	Cigars,	20	9	–	–	Good,	Designate water closets,	Complied.
William H. Owen,	Whips,	15	4	–	–	Fair,	None,	–
William Warren Thread Co.,	Whip thread,	15	20	–	2	Fair,	Provide safety device to elevator, to protect elevator opening,	Complied.
Sanford Whip Co.,	Whips,	110	15	–	–	Good,	None,	–
Connecticut Valley Cigar Co.,	Cigars,	25	75	–	–	Fair,	Protect elevator openings, better sanitary arrangements,	Complied.
Springdale Paper Co,	Fine writing paper,	35	50	–	–	Good,	None,	–
Eastern Cigar Co.,	Cigars,	26	6	–	–	Fair,	Protect elevator openings,	Complied.
Crane Bros. Glen Mill,	Linen ledger paper,	14	1	–	–	Good,	None,	–
Japanese Paper Mill,	Linen record paper,	50	75	–	–	Good,	None,	–
Schaffler & Co.,	Havana cigars,	6	2	–	–	Good,	Post legal notices,	Complied.
Troy Steam Laundry,	Laundry,	5	4	–	–	Good,	Post legal notices,	Complied.
Lay Whip Co.,	Whips,	32	8	–	–	Good,	Post legal notices, designate water closets,	Complied.
Westfield Whip Co.,	Whips,	17	8	–	1	Fair,	Better sanitary arrangements,	Complied.
A. C. Barnes Whip Co.,	Whips,	13	17	–	2	Good,	None,	–
H. B. Smith Co, No. 1,	Steam heaters,	145	–	–	–	Good,	None,	–
H. B. Smith Co., No. 2,	Steam heaters,	200	–	–	3	Fair,	Post legal notices, certificates to be filed,	Complied.

DISTRICT NO. 7 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
Westfield — Concluded.								
Bay State Whip Co.,	Whips,	13	7			Fair,	None,	–
Pomery & Van Duzen,	Whips,	21	10		2	Fair,	Designate water closets, file certificates,	Complied.
L. H. Beals & Son,	Whips,	5	2			Fair,	Better sanitary arrangements,	Complied.
William Sherman,	Cigar boxes,	4	6			Fair,	Better sanitary arrangements,	Complied.
Peck & Whipple,	Whips and lashes,	28	8		1	Bad,	Better sanitary arrangements,	Complied.
W. W. Clawson & Co.,	Waste mill,	6	–			Fair,	Protect elevator openings, fly-wheel to engine to be guarded,	Complied.
Standard Whip Co.,	Whips,	12	4			Fair,	None,	–
Geo. E. Whipple,	Whips,	18	–			Bad,	Better sanitary arrangements,	Complied.
Clark & Parker,	Whips,	12	3			Fair,	None,	–
Lee Cigar Co.,	Cigars,	4	8			Bad,	Post legal notices, better sanitary arrangements,	Complied.
A. C. Barnes,	Whips and lashes,	3	3			Bad,	Better sanitary arrangements, post legal notices,	Complied.
Bay State Cigar Co.,	Cigars,	2	1			Good,	Post legal notices,	Complied.
E. Cooper,	Whips,	3	2			Fair,	Post legal notices,	Complied.
H. O. Sprague & Son,	Stoves and ranges,	8	–			Good,	None,	–
HATFIELD.								
C. H. Shattuck,	Guns,	18	–			Good,	Main belt to be boxed,	Complied.
Porter Machine Works,	Machinery,	20	–		1	Good,	Legal notices to be posted, certificates to be filed,	Complied.

NORTHAMPTON.								
A. Kingsbury & Son,	Paper boxes,	5	44	–	1	Fair,	None,	–
Clement Manufacturing Co.,	Cutlery,	110	–	–	2	Good,	None,	–
Northampton Emery Wheel Co.,	Emery wheels,	18	–	–	–	Good,	None,	–
Northampton Cutlery Co.,	Cutlery,	254	6	3	21	Good,	None,	–
Edward E. Wood,	Cutlery,	24	1	–	6	Good,	Post legal notices, file certificates,	Complied.
Nonotuck Silk Co.,	Silk goods,	85	263	–	12	Good,	None,	–
Old Cotton Mill,	Worsted goods,	59	67	–	12	Good,	None,	–
Florence Manufacturing Co.,	Brushes & mirrors,	75	43	–	15	Good,	Designate water closets, file certificates,	Complied.
E. N. Foot & Co.,	Buttons,	20	4	–	1	Good,	Box belt that runs the polishing machine,	–
Morely Paper Co.,	Paper tissue,	15	3	–	1	Fair,	Post legal notices, designate water closets, file certificates, guard fly-wheel to engine,	Complied.
Belding Bros.,	Silk goods,	202	328	13	71	Good,	Certificates to be filed,	Complied.
Nonotuck Silk Co. (Leeds),	Silk goods,	105	180	3	46	Good,	None,	–
Connecticut Valley Lumber Co.,	Saw mill,	100	–	–	–	Good,	None,	–
Loud's Paper Mill,	Tissue paper,	6	1	–	–	Fair,	Post legal notices,	Complied.
The Watson Paper Co.,	Tissue paper,	5	3	–	–	Fair,	Post legal notices,	Complied.
J. D. Norton & Son,	Wood work,	4	–	–	–	Good,	None,	–
Nonotuck Silk Mill,	Silk,	64	136	–	–	Good,	None,	–
F. Schroppe & Co.,	Pocket books,	4	2	–	–	Good,	Post legal notices,	Complied.
Nonotuck Silk Co. (New Mill),	Silk,	63	43	–	17	Good,	None,	–
C. A. Maynard,	Shovels and hoes,	40	–	–	–	Fair,	Gears to double roller to be guarded,	Complied.
Florence Tack Co.,	Tacks,	28	8	–	3	Good,	None,	–
Damon Narrow Fabric Co.,	Bindings,	4	34	–	–	Fair,	Protect elevator openings,	Complied.
Horace Lamb & Co.,	Wire goods,	20	–	–	–	Good,	Protect elevator openings,	–
Williams Manufacturing Co.,	Baskets,	158	–	–	5	Good,	None,	–
House Furniture Co.,	Furniture,	26	4	–	1	Good,	Post legal notices,	Complied.

DISTRICT No. 7 — *Continued.*

NAME OF FACTORY OR WORKSHOP	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
EASTHAMPTON.								
Easthampton Rubber Co.,	Rubber thread,	49	–	–	2	Fair,	Provide safety device to elevator, protect elevator openings,	Complied.
Williston & Knight Co.,	Buttons,	116	34	–	2	Good,	Protect elevator openings,	Complied.
Mt. Tom Elastic Co.,	Elastic goods,	10	2	–	–	Good,	None,	–
Nashawanock Manufacturing Co.,	Elastic goods,	150	300	10	32	Fair,	Better sanitary arrangements,	Complied.
Easthampton Elastic Web Co,	Elastic goring and webbing,	9	2	–	2	Good,	Certificates filed, legal notices posted, water closets designated,	Complied.
George S. Colton,	Elastic goods,	24	18	–	6	Good,	Certificates to be filed, designate water closets,	Complied.
Glendale Elastic Fabric Co.,	Elastic goods,	125	125	–	6	Fair,	None,	–
Williston Cotton Mills,	Cotton goods,	100	180	–	48	Fair,	Better sanitary arrangements, certificates to be filed, elevator openings protected,	Complied.
HAMPDEN.								
Scantic Mills,	Horse blankets,	13	1	–	1	Fair,	None,	–
Olson Mill,	Dress goods,	38	22	1	5	Fair,	Certificates to be filed,	Complied.
P. C. Wall & Co.,	Woollen goods,	28	12	–	4	Fair,	Certificates to be filed,	Complied.
CHICOPEE.								
Chicopee Manufacturing Co.,	Cotton goods,	531	590	4	74	Good,	Fly-wheel to engine guarded, certificates to be filed,	Complied.

A. W. Page,	Latch needles,	18	11	–	–	Good,	None,	–
Dwight Manufacturing Co.,	Cotton goods,	576	904	4	101	Fair,	None,	–
Ames Manufacturing Co.,	Machinists' tools,	250	–	–	2	Good,	File certificates,	Complied.
Ames Sword Co.,	Swords and locks,	65	10	–	1	Good,	None,	–
Gaylord Co.,	Swords,	16	–	–	–	Good,	None,	–
Lamb Knitting Machine Mfg. Co.,	Knitting machines,	69	3	–	–	Good,	None,	–
Stevens Arms Co.,	Fire-arms,	50	1	–	–	Good,	None,	–
Smith & Courtney,	Bobbins,	35	–	–	5	Fair,	Certificates to be filed,	Complied.
Overman Wheel Co.,	Bicycles,	168	2	–	–	Good,	Post legal notices, designate water closets,	Complied.
John T. Lyon,	Reeds,	4	–	–	–	Fair,	None,	–
J. H. Hague,	Machinery,	12	–	–	3	Fair,	Post legal notices, file certificates,	Complied.
PALMER.								
Thorndike Mills,	Cotton goods,	260	253	3	43	Good,	Spur gears to lapping machines to be guarded,	Complied.
Palmer Mills of the Otis Co.,	Dress goods,	351	255	2	58	Good,	None,	–
Palmer Carpet Co.,	Carpets,	51	9	–	4	Good,	Guard crank to engine, file certificates,	Complied.
J. S. Holden & Co.,	Silk and woollen,	23	24	–	6	Good,	Belt to be boxed,	Complied.
Wright Wire Cloth Co.,	Wire cloth and netting,	30	1	–	5	Good,	Certificates to be filed,	Complied.
Palmer Wire Manufacturing Co.,	Wire,	49	1	–	–	Fair,	Protect elevator openings,	Complied.
Boston Duck Co.,	Cotton goods,	212	212	2	34	Good,	Main belt to be guarded by railing, certificates to be filed,	Complied.
J. M. Smith,	Shoddy,	4	1	–	–	Good,	None,	–
F. F. Marcy,	Lumber,	17	1	–	–	Good,	None,	–
Ridge's Food Co.,	Ridge's food,	6	1	–	–	Good,	Protect elevator openings,	Complied.
WEST SPRINGFIELD.								
Southworth Paper Mill, No. 1,	Loft-dried paper,	46	82	1	11	Good,	None,	–

DISTRICT No. 7 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
West Springfield — Concluded.								
Agawam Paper Co., No. 2,	Loft-dried paper,	41	89	–	–	Good,	None,	–
Worthy Paper Mill,	Loft-dried paper,	30	45	–	–	Good,	Hatches to elevator opening to be repaired,	Complied
Springfield Glazed Paper Co.,	Glazed paper,	39	3	–	–	Good,	None,	–
Agawam Paper Co, No. 1,	Loft-dried paper,	23	50	–	–	Good,	None,	–
Agawam Co.,	Woollen goods,	23	5	–	–	Fair,	Fly-wheel to engine to be guarded by railing,	Complied.
Southworth Paper Mill, No. 2,	Loft-dried paper,	40	85	–	1	Good,	None,	–
HUNTINGTON.								
Highland Woollen Mill,	Woollen goods,	100	50	2	9	Good,	Fly-wheel to engine to be guarded by railing,	Complied.
Chester Paper Co.,	Loft-dried paper,	34	36	–	2	Fair,	Certificates to be filed,	Complied.
MIDDLEFIELD.								
Union Mill,	Ribbon paper,	16	4	–	1	*–	Better sanitary arrangements, post legal notices, shafting in basement guarded,	Complied.
Bancroft Mill,	Roll paper,	15	4	–	1	Fair,	Better sanitary arrangements, certificate to be filed, post legal notices,	Complied.
Church Bros., No. 1,	Woollen & cotton,	17	6	–	2	Fair,	Certificate to be filed,	Complied.

Church Bros., No. 2,	Woollen & cotton,	12	5	–	2	Fair,	Certificates to be filed, better sanitary arrangements,	Complied.
CHESTER.								
Hampden Emery Corundum Co.,	Emery wheels,	20	–	–	–	Good,	None,	–
Hampden Emery Co.,	Corundum and emery,	9	–	–	–	Good,	None,	–
Grant Corundum Mfg. Co.,	Emery wheels,	12	–	–	2	Good,	Certificates to be filed,	Complied.
Timothy Keefe,	Bedsteads,	5	–	–	–	Good,	None,	–
Hampden Corundum Wheel Co.,	Emery wheels,	4	–	2	–	Good,	Legal notices posted, certificates to be filed,	Complied.
GRANVILLE.								
Noble & Cooly,	Toy drums,	72	8	–	–	Good,	Certificates to be filed, belt to veneering machines to be guarded,	Complied.
Holcomb Bros.,	Sewing machine pitmans,	8	–	–	–	Fair,	None,	–
ENFIELD.								
Swift River Co.,	Fancy cassimeres,	80	40	2	3	Good,	None,	–
Minot Manufacturing Co.,	Cassimere goods,	17	5	–	–	Fair,	Legal notices to be posted,	Complied.
WALES.								
Shaw Mill,	Woollen goods,	40	12	–	3	Fair,	Fly-wheel and main belt to be guarded, stairway guarded by railing,	†–
Dell Mill,	Woollen goods,	50	25	–	3	Fair,	None,	†–
Hegan Mill,	Woollen goods,	48	12	–	–	Fair,	Gates to elevator openings repaired,	†–
LONGMEADOW.								
Thimble and Spectacle Factory,	Thimbles and spectacles,	5	–	–	–	Good,	None,	–
Meadow Co.'s Mill,	Stockinet goods,	8	9	–	–	Good,	Post legal notices,	Complied.

* Not good. † Out of business.

DISTRICT No. 7 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	NUMBER EMPLOYED.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 16.	16 to 18.			
SOUTH HADLEY.								
Howard, Gaylord & Co.,	Sashes and blinds,	9	–	–	–	Good,	Guard pulley to band saw, post legal notices,	Complied.
Pearl City Paper Mill,	Tissue paper,	3	1	–	–	Fair,	Post legal notices,	Complied.
SOUTH HADLEY FALLS.								
Glasgow Mills,	Dress goods,	106	214	1	19	Fair,	None,	–
Carew Manufacturing Co.,	Loft-dried paper,	39	47	–	–	Good,	Water closets designated,	Complied.
Hampshire Paper Co.,	Loft-dried paper,	36	79	–	–	Good,	None,	–
MONSON.								
D. W. Ellis,	Cassimeres,	40	30	–	9	Fair,	Certificates to be filed,	Complied.
R. M. & F. Reynolds' Mills,	Dress goods,	117	58	–	6	Good,	Protect elevator openings, box belt,	Complied.
S. F. Cushman, Home Mill,	Cassimeres,	69	31	–	4	Good,	Certificates to be filed,	Complied.
S. F. Cushman, Branch Mill,	Woollen goods,	27	13	–	2	Good,	None,	–
WILLIAMSBURG.								
Henry L. James,	Woollens,	46	24	–	3	Fair,	Better sanitary arrangements, fly-wheel to engine guarded,	Complied.
Hayden Manufacturing Co.,	Brass goods,	205	20	–	3	Good,	Post legal notices, designate water closets,	Complied.
Nonotuck Silk Co.,	Silk goods,	10	65	–	8	Good,	None,	–

Hill Bros. & Co.,	Buttons and wood turning,	7	1	–	–	Fair,	None,	–
William Thayer,	Cutlery,	12	–	–	–	Fair,	None,	–
LUDLOW.								
Ludlow Manufacturing Co,	Corded goods,	438	265	8	104	Fair,	None,	–
WILBRAHAM.								
Collins Manufacturing Co.,	Loft-dried paper,	70	100	–	–	Good,	None,	–
Wilbraham Woollen Co.,	Fancy cassimere,	24	8	–	–	Fair,	None,	–
AMHERST.								
Hills Co,	Straw goods,	100	125	–	1	Good,	Elevator well in basement guarded, water closets designated, legal notices posted, certificate to be filed,	Complied.
H. D. Fearing & Co.,	Straw goods,	30	145	–	1	Good,	Water closets designated, elevator openings to be guarded, legal notices posted, certificate filed,	Complied.
Cushman's Mills,	Leather and straw board,	19	–	–	–	Fair,	Legal notices posted, protect elevator openings,	Complied.
WARE.								
C. A. Stevens,	Woollen goods,	97	80	2	22	Fair,	None,	–
The Otis Mills,	Cotton goods,	735	893	3	96	Good,	None,	–
George H. Gilbert,	Dress goods and flannels,	165	195	1	30	Good,	None,	–
West Ware Paper Mill,	Paper,	17	13	–	–	Fair,	Post legal notices,	Complied.

DISTRICT No. 7 — *Concluded.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Numbers Employed. Males.	Females.	Under 14.	14 to 16.	Sanitary Condition.	Orders Given.	Compliances.
RUSSELL.								
Fairfield Paper Co.,	Loft-dried paper,	79	107	–	2	Good,	Legal notices to be posted,	Complied.
Chapin & Gould,	Loft-dried paper,	37	56	–		Fair,	Better sanitary arrangements, certificates to be filed,	Complied.

DISTRICT No. 8, F. A. Osgood, *Inspector.*

BEVERLY								
Whitman Manufacturing Co.,	Turned wooden,	73	2	–	–	Bad,	Safety catches on elevator, and sanitary,	
Grover & Friend,	Wood and paper boxes,	8	8	–	–	Bad,	Safety catches on elevator, and sanitary,	
A. Perry,	Boots and shoes,	20	40	–	2	Good,	None,	
L. K. Goodhue,	Boots and shoes,	9	3	–	–	Fair,	None,	
Millett, Woodbury & Co.,	Boots and shoes,	17	1	–	–	Fair,	None,	
J. H. Baker & Co.,	Boots and shoes,	106	54	–	–	Good,	None,	
Hill & Green,	Boots and shoes,	80	45	–	3	Good,	Schooling certificates,	Complied.
Wallis, Kilham & Bray,	Boots and shoes,	150	100	–	–	Good,	None,	
David Lefavour & Son,	Boots and shoes,	100	100	–	–	Good,	None,	

Charles H. Cressey & Co.,	Boots and shoes,	67	33	–	–	Good,	Time notice,	Complied.
H. P. Burnham,	Stitching boots and shoes,	1	10	–	1	Good,	Schooling certificates, shafting guarded,	Complied.
Burley & Usher,	Boots and shoes,	66	19	–	–	Fair,	Schooling certificates, time notice, main belt guarded,	Complied.
Frank Woodbury,	Boots and shoes,	28	15	–	–	Good,	None,	–
B. E. Cole & Co.,	Boots and shoes,	25	26	–	1	Fair,	Time notice,	Complied.
S. F. Crosman,	Stitching boots and shoes,	3	97	–	–	Fair,	Time notice, shafting guarded, sanitary,	Complied.
Seth Norwood & Co.,	Boots and shoes,	85	80	–	2	Fair,	Time notice, sanitary designated,	Complied.
J. W. Ober,	Boots and shoes,	5	2	–	–	Fair,	None,	–
J. L. Porter,	Boots and shoes,	2	3	–	–	Fair,	None,	–
Hanson & Jenkins,	Boots and shoes,	25	15	–	1	Fair,	None,	–
G. H. Thissell,	Boots and shoes,	4	1	–	–	Fair,	None,	–
Andrew K. Cressey,	Boots and shoes,	7	–	–	–	Fair,	None,	–
Myron Woodbury,	Boots and shoes,	13	2	–	–	Fair,	Time notice, sanitary,	Complied.
W. P. Lefavour,	Stitching boots and shoes,	29	1	–	1	Fair,	Time notice,	Complied.
J. & J. W. Marshall,	Boots and shoes,	20	11	–	–	Good,	Main belting guarded,	Complied.
R. E. Larcom,	Boots and shoes,	36	4	–	–	Good,	None,	–
Raymond & Nador,	Boots and shoes,	12	–	–	–	Good,	None,	–
BOXFORD.								
Diamond Match Co.,	Matches,	17	3	–	8	Fair,	Schooling certificate,	Complied.
BRADFORD.								
Haverhill Paper Mills,	Paper,	52	3	–	1	Fair,	None,	–
J. P. Gilman & Sons,	Woollen hats,	41	24	–	4	Fair,	None,	–
Haverhill Paper Mills,	Paper,	60	4	–	–	Fair,	None,	–

DISTRICT No. 7 — *Concluded.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
RUSSELL.								
Fairfield Paper Co.,	Loft-dried paper,	79	107	–	2	Good,	Legal notices to be posted,	Complied.
Chapin & Gould,	Loft-dried paper,	37	56	–	1	Fair,	Better sanitary arrangements, certificates to be filed,	Complied.

DISTRICT No. 8, ... F. A. OSGOOD, *Inspector.*

BEVERLY								
Whitman Manufacturing Co.,	Turned wooden,	73	2	–	–	Bad,	Safety catches on elevator, and sanitary,	–
Grover & Friend,	Wood and paper boxes,	8	8	–	–	Bad,	Safety catches on elevator, and sanitary,	–
A. Perry,	Boots and shoes,	20	40	–	2	Good,	None,	–
L. K. Goodhue,	Boots and shoes,	9	3	–	–	Fair,	None,	–
Millett, Woodbury & Co.,	Boots and shoes,	17	1	–	–	Fair,	None,	–
J. H. Baker & Co.,	Boots and shoes,	106	54	–	–	Good,	None,	–
Hill & Green,	Boots and shoes,	80	45	–	3	Good,	Schooling certificates,	Complied.
Wallis, Kilham & Bray,	Boots and shoes,	150	100	–	–	Good,	None,	–
David Lefavour & Son,	Boots and shoes,	100	100	–	–	Good,	None,	–

Charles H. Cressey & Co.,	Boots and shoes,	67	33	–	–	Good,	Time notice,	Complied.
H. P. Burnham,	Stitching boots and shoes,	1	10	–	1	Good,	Schooling certificates, shafting guarded,	Complied.
Burley & Usher,	Boots and shoes,	66	19	–	–	Fair,	Schooling certificates, time notice, main belt guarded,	Complied.
Frank Woodbury,	Boots and shoes,	28	15	–	–	Good,	None,	–
B. E. Cole & Co.,	Boots and shoes,	25	26	–	1	Fair,	Time notice,	Complied.
S. F. Crosman,	Stitching boots and shoes,	3	97	–	–	Fair,	Time notice, shafting guarded, sanitary,	Complied.
Seth Norwood & Co.,	Boots and shoes,	85	80	–	2	Fair,	Time notice, sanitary designated,	Complied.
J. W. Ober,	Boots and shoes,	5	2	–	–	Fair,	None,	–
J. L. Porter,	Boots and shoes,	2	3	–	–	Fair,	None,	–
Hanson & Jenkins,	Boots and shoes,	25	15	–	1	Fair,	None,	–
G. H. Thissell,	Boots and shoes,	4	1	–	–	Fair,	None,	–
Andrew K. Cressey,	Boots and shoes,	7	–	–	–	Fair,	None,	–
Myron Woodbury,	Boots and shoes,	13	2	–	–	Fair,	Time notice, sanitary,	Complied.
W. P. Lefavour,	Stitching boots and shoes,	29	1	–	1	Fair,	Time notice,	Complied.
J. & J. W. Marshall,	Boots and shoes,	20	11	–	–	Good,	Main belting guarded,	Complied.
R. E. Larcom,	Boots and shoes,	36	4	–	–	Good,	None,	–
Raymond & Nador,	Boots and shoes,	12	–	–	–	Good,	None,	–
BOXFORD.								
Diamond Match Co.,	Matches,	17	3	–	3	Fair,	Schooling certificate,	Complied.
BRADFORD.								
Haverhill Paper Mills,	Paper,	52	3	–	1	Fair,	None,	–
J. P. Gilman & Sons,	Woollen hats,	41	24	–	4	Fair,	None,	–
Haverhill Paper Mills,	Paper,	60	4	–	–	Fair,	None,	–

DISTRICT No. 7 — *Concluded.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
RUSSELL.								
Fairfield Paper Co.,	Loft-dried paper,	79	107	–	2	Good,	Legal notices to be posted,	Complied.
Chapin & Gould,	Loft-dried paper,	37	56	–	1	Fair,	Better sanitary arrangements, certificates to be filed,	Complied.

DISTRICT No. 8, ... F. A. OSGOOD, *Inspector*.

BEVERLY								
Whitman Manufacturing Co.,	Turned wooden,	73	2	–	–	Bad,	Safety catches on elevator, and sanitary,	–
Grover & Friend,	Wood and paper boxes,	8	8	–	–	Bad,	Safety catches on elevator, and sanitary,	–
A. Perry,	Boots and shoes,	20	40	–	2	Good,	None,	–
L. K. Goodhue,	Boots and shoes,	9	3	–	–	Fair,	None,	–
Millett, Woodbury & Co.,	Boots and shoes,	17	1	–	–	Fair,	None,	–
J. H. Baker & Co.,	Boots and shoes,	106	54	–	–	Good,	None,	–
Hill & Green,	Boots and shoes,	80	45	–	3	Good,	Schooling certificates,	Complied.
Wallis, Kilham & Bray,	Boots and shoes,	150	100	–	–	Good,	None,	–
David Lefavour & Son,	Boots and shoes,	100	100	–	–	Good,	None,	–

Charles H. Cressey & Co.,	Boots and shoes,	67	33	–	–	Good,	Time notice,	Complied.
H. P. Burnham,	Stitching boots and shoes,	1	10	–	1	Good,	Schooling certificates, shafting guarded,	Complied.
Burley & Usher,	Boots and shoes,	66	19	–	–	Fair,	Schooling certificates, time notice, main belt guarded,	Complied.
Frank Woodbury,	Boots and shoes,	28	15	–	–	Good,	None,	–
B. E. Cole & Co.,	Boots and shoes,	25	26	–	1	Fair,	Time notice,	Complied.
S. F. Crosman,	Stitching boots and shoes,	3	97	–	–	Fair,	Time notice, shafting guarded, sanitary,	Complied.
Seth Norwood & Co.,	Boots and shoes,	85	80	–	2	Fair,	Time notice, sanitary designated,	Complied.
J. W. Ober,	Boots and shoes,	5	2	–	–	Fair,	None,	–
J. L. Porter,	Boots and shoes,	2	3	–	–	Fair,	None,	–
Hanson & Jenkins,	Boots and shoes,	25	15	–	1	Fair,	None,	–
G. H. Thissell,	Boots and shoes,	4	1	–	–	Fair,	None,	–
Andrew K. Cressey,	Boots and shoes,	7	–	–	–	Fair,	None,	–
Myron Woodbury,	Boots and shoes,	13	2	–	–	Fair,	Time notice, sanitary,	Complied.
W. P. Lefavour,	Stitching boots and shoes,	29	1	–	1	Fair,	Time notice,	Complied.
J. & J. W. Marshall,	Boots and shoes,	20	11	–	–	Good,	Main belting guarded,	Complied.
R. E. Larcom,	Boots and shoes,	36	4	–	–	Good,	None,	–
Raymond & Nador,	Boots and shoes,	12	–	–	–	Good,	None,	–
BOXFORD.								
Diamond Match Co.,	Matches,	17	3	–	3	Fair,	Schooling certificate,	Complied.
BRADFORD.								
Haverhill Paper Mills,	Paper,	52	3	–	1	Fair,	None,	–
J. P. Gilman & Sons,	Woollen hats,	41	24	–	4	Fair,	None,	–
Haverhill Paper Mills,	Paper,	60	4	–	–	Fair,	None,	–

DISTRICT No. 8 — *Continued.*

NAME OF FACTORY OR WORKSHOP	Goods Manufactured.	NUMBER EMPLOYED.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
Bradford — Concluded.								
J. P. Gilman & Sons,	Woollen hats,	42	25	–	5	Fair,	None,	–
DANVERS.								
J. E. Farrar & Co.,	Boots and shoes,	50	40	–	–	Fair,	Sanitary,	Complied.
O. N. Fernald,	Stitching boots and shoes,	2	8	–	–	Fair,	Time notice, shafting guarded,	Complied.
John C. Campbell,	Boots and shoes,	99	1	–	–	Fair,	None,	–
B. E. Cole & Co.,	Boots and shoes,	100	100	–	–	Fair,	Shafting and belting guarded,	Complied.
Nathaniel Glover & Co.,	Boots and shoes,	40	30	–	–	Good,	None,	–
Fred. L. Webster,	Canned goods,	18	57	–	–	Fair,	None,	–
P. Sullivan & Son,	Boots and shoes,	15	10	–	–	Fair,	Shafting guarded,	Complied.
Derry & Gould,	Wooden and paper boxes,	12	8	–	1	Fair,	Schooling certificates,	Complied.
C. A. Keith,	Boots and shoes,	22	8	–	–	Fair,	None,	–
Eaton & Sears,	Boots and shoes,	50	50	–	1	–	Schooling certificates,	Complied.
ESSEX.								
S. B. Fuller & Sons,	Boots and shoes,	25	25	–	–	Fair,	None,	–
CITY OF GLOUCESTER.								
Cape Ann Shoe Co.,	Boots and shoes,	20	40	–	–	Fair,	Sanitary,	Complied.
Gloucester Net and Twine Co.,	Nets and twine,	30	120	–	14	Good,	None,	–

Le Page Co.,	Fish glue,	12	4	–	–	Fair,	Belting guarded, elevator repaired,	Complied.
Cunningham & Thomas,	Fish dealers,	38	12	–	–	Fair,	None,	–
Russia Cement Co.,	Cements,	28	18	–	–	Good,	None,	–
Merchant Box Manuf.,	Box manuf'a and printing,	15	–	–	–	Fair,	None,	–
GROVELAND.								
Mrs Mary E. George,	Shoe stitching,	–	5	–	–	Fair,	None,	–
Groveland Mill, No. 1,	Woollens, etc,	64	55	–	11	Good,	None,	–
Groveland Mill, No. 2,	Woollens, etc.,	73	42	–	7	Good,	None,	–
Groveland Mill, No. 3,	Woollens, etc.,	103	61	–	15	Good,	None,	–
Groveland Mill, No. 1,	Woollens, etc,	79	56	–	12	Good,	None,	–
Groveland Mill, No 2,	Woollens, etc.,	73	43	–	7	Good,	None,	–
Groveland Mill, No 3,	Woollens, etc,	103	62	–	14	Good,	None,	–
H. Nash,	Cider mill,	5	–	–	–	Good,	Shafting guarded,	Complied.
CITY OF HAVERHILL.								
Gale Brothers,	Boots and shoes,	100	50	1	1	Fair,	None,	–
A. J. Dudley & Co,	Shoe trimmings,	10	10	–	–	* –	Time notice, sanitary, additional closet,	Complied.
E. W. Moore,	Boots and shoes,	40	20	–	–	Fair,	Time notice,	Complied.
P. N. Wadleigh,	Boots and shoes,	8	2	–	–	Fair,	Time notice,	Complied.
D. F Sprague,	Boots and shoes,	6	1	–	–	Fair,	Time notice,	Complied.
Frank Davis,	Shoe contractor,	15	–	–	–	Fair,	None,	–
Hodgdon & Sergeant,	Boots and shoes,	8	2	–	–	Fair,	Time notice,	Complied.
Harris & Sprague,	Boots and shoes,	37	17	–	–	Fair,	Time notice, sanitary,	–
H. H. Hale,	Boots and shoes,	14	1	–	–	Fair,	None,	–
E C. Miller,	Boot and shoe stitcher,	5	35	–	–	Fair,	Sanitary designation,	Complied.
A J. Tilton,	Boots and shoes,	55	15	–	–	Good,	None,	–
Knipe Brothers,	Boots and shoes,	50	20	–	3	Good,	Time notice,	Complied.

* Not good.

DISTRICT No. 8 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	NUMBER EMPLOYED.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
City of Haverhill — Concluded.								
Swett & Bond,	Boots and shoes,	125	75	–	–	Good,	None,	–
Chick Brothers,	Boots and shoes,	175	75	–	3	Fair,	None,	–
Frank S Gage,	Boots and shoes,	16	8	–	1	Fair,	New hoisting cable for elevator,	Complied.
E. S. Tappan,	Boot and shoe stitching,	2	15	–	–	–	Sanitary, additional closet,	Complied.
Noyes & Swett,	Boots and shoes,	55	2	–	–	Fair,	None,	–
N. F Gorman,	Slippers,	20	10	–	–	Fair,	None,	–
W. F. & J. A. Blake,	Boots and shoes,	100	50	–	2	Good,	None,	–
Varney & Hayes,	Wooden and paper boxes,	40	60	–	1	Fair,	None,	–
Stevens Mills,	Flannels,	100	55	–	6	Good,	None,	–
IPSWICH.								
Ipswich Upper Mills,	Hosiery,	217	324	–	36	Good,	None,	–
Ipswich Lower Mills,	Hosiery,	15	52	–	4	Good,	None,	–
J. A. Johnson,	Boots and shoes,	55	20	–	–	Good,	None,	–
Farley & Daniels,	Boots and shoes,	19	1	–	–	Good,	None,	–
CITY OF LAWRENCE.								
Everett Mills,	Cotton sheetings, etc.,	587	532	11	67	Good,	None,	–
Russell Paper Co.,	Paper,	244	18	–	2	Good,	None,	–

Webster & Dustin,	Mill machinery,	30	–	–	–	Good,	None,	–
S. F. Dawson,	Leather board,	22	–	–	–	Good,	None,	–
Lawrence Machine Co.,	General machine shop,	40	–	–	–	Good,	None,	–
Union Shuttle Co,	Shuttles, spindles, etc,	13	–	–	–	Good,	None,	–
Wright Manufacturing Co,	Worsted braids,	13	87	–	2	Good,	None,	–
E. Davis & Sons,	Iron foundry,	45	–	–	–	Good,	None,	–
Lawrence Mills,	Cloakings,	125	50	–	11	Good,	None,	–
Lawrence Duck Co.,	Duck, twine, etc.,	98	162	1	16	Good,	None,	–
Munroe Felt and Paper Co.,	Paper,	46	4	–	–	Fair,	None,	–
Merrimac Paper Co.,	Paper,	100	25	–	1	Good,	None,	–
Clegg & Fisher,	Leather board,	30	–	–	–	Good,	None,	–
Thomas Clegg,	Looms, reeds and harnesses,	10	–	–	–	Fair,	None,	–
Stedman & Smith,	Machinery,	14	–	–	–	Fair,	None,	–
Lawrence Line Co,	Fish lines & cords,	5	15	–	–	Poor,	Sanitary, additional closet,	Complied.
Farwell Bleachery,	Bleaching,	93	7	–	–	Good,	None,	–
Pemberton Co.,	Cotton goods,	210	437	7	12	Good,	None,	–
Emerton Loom Harness Co.,	Looms, reeds and harnesses,	40	40	–	1	Fair,	Time notice, safety device on elevator,	Complied.
Briggs & Allen,	General jobbing, saw mill,	45	–	–	–	Fair,	None,	–
Merrimac Valley Felt & Woollen Co,	Wool and felt boots,	20	–	–	–	Fair,	None,	–
CITY OF LYNN.								
Harney Brothers,	Boots and shoes,	30	50	–	–	Fair,	None,	–
Mrs. E. A. Patch,	Stitching boots and shoes,	1	40	–	–	Good,	Time notice,	–

* Not sufficient.

DISTRICT No. 8 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	NUMBER EMPLOYED.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 18.			
City of Lynn — Concluded.								
Patrick F Sherry,	Boots and shoes,	40	25			Fair,	Elevator guards kept closed,	–
Brown, Dickinson & Co.,	Boots, shoes and slippers,	71	4			Fair,	Time notice, sanitary,	Complied.
Balcomb & Nutter,	Stitching,	1	40			Fair,	Time notice,	Complied.
W. S. Dickson,	Sole cutting,	10	–			Fair,	None,	–
Russell & Co.,	Shoe findings,	4	1			Fair,	Safety device on elevator,	Complied.
John Macnair,	Boots and shoes,	163	92			Fair,	None,	–
Amos Fawcett,	Stitching boots and shoes,	2	38			Poor,	Sanitary, communication between rooms and engineer's room,	–
George Smith,	Boots and shoes,	20	5		1	Poor,	Sanitary,	–
Murphy Brothers,	Boots and shoes,	46	24		1	Poor,	Time notice, schooling certificates, sanitary,	–
Wells & Kellum,	Printing,	7	–			Fair,	None,	–
Shoe Contracting Co.,	Shoemakers,	19	2			Fair,	None,	–
J. J. Hennesy & Co.,	Boots and shoes,	65	65			Fair,	Time notice,	Complied.
P. A. Newhall,	Boots and shoes,	25	–			Fair,	None,	–
D. J. Crawley,	Boots and shoes,	47	48			Fair,	Belting guarded,	Complied.
H. G. Connor,	Boots and shoes,	24	1			Poor,	None,	–
Mary E. Lawthrope,	Stitching boots and shoes,	–	15			Fair,	None,	–
J. W. Ingalls & Sons,	Boots and shoes,	45	55		3	Good,	Time notice, schooling certificate,	Complied.

M. R. Connor,	Stitching boots and shoes,	1	31	–	2	Poor,	Sanitary, additional closet,	Complied.
Creighton Brothers,	Boots and shoes,	75	25	–	–	Fair,	None,	–
Skinner & Scott,	Fine carriages,	8	–	–	–	Fair,	None,	–
F. D. Farror,	Tacks and shoe nails,	9	1	–	–	Fair,	None,	–
Cory & Farnham,	Boots and shoes,	5	–	–	–	Poor,	None,	–
George Nicholson,	Boots and shoes,	5	–	–	–	Poor,	None,	–
Allen & Boyden,	Wooden and paper boxes,	25	50	–	–	Fair,	Time notice,	Complied.
C. W. Varney & Co,	Boots and shoes,	117	58	–	2	Good,	Time notice, schooling certificate,	Complied.
C. H. Aborn,	Boots and shoes,	100	50	–	1	Good,	Time notice, schooling certificate,	Complied.
D. A. Donavan & Co.,	Boots and shoes,	45	30	–	–	Good,	None,	–
E. W. & W. LeCroix,	Boots and shoes,	38	2	–	1	Good,	Schooling certificate,	Complied.
G. L. Freeman,	Boots and shoes,	6	34	–	–	Fair,	Time notice,	Complied.
N. J. Mooney & Co.,	Boots and shoes,	19	1	–	1	Fair,	Time notice, schooling certificate,	Complied.
Melcher & Spinney,	Rubber goods,	23	2	–	–	Fair,	None,	–
Rumsey Brothers,	Boots and shoes,	100	100	–	–	Good,	Time notice,	Complied.
B. H. Dorman,	Boots and shoes,	12	13	–	–	Fair,	Time notice,	Complied.
Lynn Box Co.,	Wooden and paper boxes,	20	59	–	1	Good,	Schooling certificate, time notice,	Complied.
Keene Brothers,	Boots and shoes,	90	30	–	1	Good,	Schooling certificate,	Complied.
J. C. Fox & Co.,	Boots and shoes,	23	12	–	–	Fair,	Belting guarded,	Complied.
Thomson-Houston Electric Co.,	Electric machines, etc.,	1340	225	–	42	Good,	None,	–
A. M. & J. H. Preble,	Boots and shoes,	20	30	–	–	Fair,	None,	–
M. H. Whittredge,	Boots and shoes,	140	60	–	–	Fair,	Shafting guarded,	Complied.
Harney Brothers,	Boots and shoes,	60	40	–	–	Fair,	Shafting and belting guarded,	Complied.
Chas. B. Tibbetts,	Boots and shoes,	75	75	–	1	Good,	Schooling certificates, shafting guarded,	–
P. J. Hanley,	Boots and shoes,	30	30	–	–	Good,	Shafting guarded,	–

DISTRICT No. 8 — *Continued.*

NAME OF FACTORY OR WORKSHOP	Goods Manufactured.	NUMBER EMPLOYED.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
City of Lynn — Concluded.								
E. W. & C. F. Mower,	Boots and shoes,	45	30	–	1	Fair,	Schooling certificate,	Complied.
J. C. Bennett & Barnard,	Boots and shoes,	194	75	–	2	Good,	Schooling certificate,	–
Fenton & Co.,	Furniture,	27	3	–	–	Good,	None,	–
Shilabar & Co.,	Boots and shoes,	85	55	–	–	Good,	None,	–
B. F. Mower,	Boots and shoes,	35	24	–	–	Fair,	Safeguard to elevator repaired,	Complied.
Mower & Brother,	Boots and shoes,	75	25	–	–	Fair,	Safeguard to elevator repaired,	Complied.
C. H. & J. M. Bennett,	Boots and shoes,	20	5	–	–	Fair,	None,	–
Thomas Brothers,	Wooden and paper boxes,	20	30	–	–	Good,	None,	–
C. A. Coffin & Co.,	Boots and shoes,	40	30	–	1	Good,	Schooling certificate,	Complied.
Morgan & Dore,	Boots and shoes,	40	–	–	–	Good,	None,	–
C. S. Sweetser & Co.,	Boots and shoes,	95	5	–	–	Good,	None,	–
George W. Whipple,	Stitching (boots and shoes),	1	24	–	–	Good,	None,	–
S. B. Fuller & Son,	Boots and shoes,	55	45	–	–	Good,	None,	–
LYNNFIELD.								
Henry Laws,	Boots and shoes,	70	35	–	–	Fair,	Sanitary designation,	–
BYFIELD								
Byfield Woollen Mills,	Woollen blankets,	73	12	–	3	Good,	Schooling certificate,	–

MARBLEHEAD.								
Edwin S Woodbury,	Boots and shoes,	100	150	–	–	Good,	None,	–
Joseph Harris & Sons,	Boots and shoes,	115	60	–	–	Good,	None,	–
F. A. Parker & Co.,	Boots and shoes,	19	22	–	–	Good,	None,	–
George Hooper, 2d,	Boots and shoes,	22	23	–	–	Good,	None,	–
John Laney,	Boots and shoes,	15	15	–	–	Fair,	None,	–
Wm. E Brown, 2d,	Boots and shoes,	16	14	–	–	Fair,	None,	–
R. H. Union,	Boots and shoes,	9	6	–	–	Fair,	None,	–
C. Tucker,	Boots and shoes,	7	8	–	–	Fair,	None,	–
D. S. Bessom,	Boots and shoes,	8	12	–	–	Fair,	None,	–
John B Witham,	Boots and shoes,	46	24	–	–	Fair,	None,	–
Wm H Boynton & Son,	Boots and shoes,	45	30	–	–	Fair,	None,	–
John C. Peach,	Boots and shoes,	40	20	–	–	Good,	None,	–
P. Lyons,	Boots and shoes,	50	20	–	–	Poor,	Sanitary, additional closet,	Complied.
MERRIMAC.								
Bay State Felt Boot & Shoe Co.,	Felt boots & shoes,	26	26	–	1	Fair,	None,	–
METHUEN.								
Methuen Co.,	Cotton goods,	140	260	4	8	Good,	None,	–
Knit Fabric Co.,	Knit wool fabrics,	15	30	–	–	Good,	None,	–
J. N. Tenny,	Wool & felt hats,	95	25	–	6	Good,	None,	–
MIDDLETON.								
Hickey & Wilder,	Paper-hangings,	27	5	–	–	Fair,	Fans, or other means of ventilation, time notice, belting guarded,	*
Taylor & Armstrong,	Boots and shoes,	57	28	–	–	Fair,	None,	–
J. B. Thomas,	Wood and paper boxes,	34	1	–	–	Fair,	Time notice,	Complied.

* Business changed, no dust engendered, no women employed, belting not guarded.

DISTRICT No. 8 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	NUMBER EMPLOYED.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
CITY OF NEWBURYPORT.								
E P Dodge,	Boots and shoes,	230	120	1	23	Good,	None,	–
N. D Dodge,	Boots and shoes,	200	100	–	3	Good,	None,	–
Wilder & Clark,	Boots and shoes,	40	20	–	1	Fair,	None,	–
Newburyport Shoe Co.,	Boots and shoes,	60	30	–	1	Fair,	Elevator repaired,	Complied.
Carr, Brown & Co,	Combs,	39	1	–	–	Fair,	None,	–
Towle Manfg. Co.,	Plated ware,	199	31	–	–	Good,	None,	–
Bayley Hat Co.,	Felt hats,	135	75	–	8	Good,	None,	–
Victoria Mills,	Cotton goods,	185	160	–	12	Good,	None,	–
Peabody Mills,	Cotton goods,	119	241	–	15	Good,	None,	–
NORTH ANDOVER.								
Machine Shop,	Mill harnesses,	363	15	–	4	Good,	None,	–
Stevens' Mills,	Woollen goods,	45	70	2	5	Good,	None,	–
North Andover Mills,	Dress goods and flannels,	59	37	1	10	Good,	None,	–
Sutton's Mills,	Woollen goods,	48	83	1	5	Good,	None,	–
PEABODY.								
Danvers Bleachery and Dye Works,	Dyeing works,	148	12	–	–	Good,	None,	–
Upton's Glue Works,	Glue,	100	30	–	3	Fair,	Time notice,	Complied.

Robinson-Foster Electric Motor Co.,	Electric motors,	40	–	–	–	Good,	Main belting guarded,	Complied.
Shaw, Warren & Co.,	Boots and shoes,	70	30	–	–	Good,	None,	–
CITY OF SALEM.								
Alma Bigelow & Washburn,	Workshop,	5	9	–	–	Poor,	Safety device on elevator, closet extra sanitary designation, belting guarded,	Complied.
Chas. H. Jewett,	Laundry,	4	11	–	–	Fair,	Time notice, belting guarded,	–
B. J. Mulligan,	Moulded counters for boots & shoes,	75	35	–	5	Fair,	None,	–
Jos. F. Pitman,	Boots and shoes,	50	25	–	–	Fair,	None,	–
J. Woodbury & Co.,	Boots and shoes,	31	4	–	–	Fair,	None,	–
John Reynolds,	Inner soles, taps, etc.,	7	–	–	–	Fair,	None,	–
T. J. Flynn,	Inner soles, taps, etc.,	25	14	–	–	Fair,	None,	–
A. W. Capp,	Wood and paper boxes,	6	9	–	–	Poor,	Sanitary,	–
N. P. Gifford,	Planing & moulding,	35	–	–	–	Fair,	None,	–
F. W. & I. M. Munroe,	Boots and shoes,	90	90	–	–	Good,	None,	–
J. W. Woodbury Co.,	Boots and shoes,	62	63	–	–	Good,	Elevator well holes guarded,	–
M. S. & P. J. Eberson,	Stitching boots and shoes,	2	18	–	–	Good,	Shafting guarded,	Complied.
SAUGUS.								
H. B. Newhall & Son,	Coffee and spice mill,	2	5	–	–	Fair,	None,	–
Grovenor & Richards,	Surgical plasters, etc.,	30	20	–	3	Fair,	Time notices, sanitary designation, schooling certificate,	Complied.

DISTRICT NO. 8 — *Concluded.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
Saugus — Concluded.								
E. T Kent,	Cleansing hair factory,	7	–	–	–	Fair,	None,	–
C. M. Burrell,	Boots and shoes,	8	–	–	–	Fair,	None,	–
H. S. Grover,	Stitching (boots and shoes),	3	21	–	–	Fair,	None,	–
Pranker Manufacturing Co.,	Woollen goods,	61	36	–	–	Fair,	None,	–
GEORGETOWN.								
Parker River Mills,	Woollen goods,	30	20	–	1	Fair,	None,	–
Stephen Osgood,	Custom tailor,	5	10	–	–	Fair,	None,	–
W. M. Brewster,	Boots and shoes,	75	–	–	–	Fair,	Shafting guarded,	–
Little & Co. Corporation,	Boots and shoes,	39	1	–	–	Fair,	None,	–
A. B. Noyes & Co. Corporation,	Boots and shoes,	48	2	–	1	Fair,	Schooling certificate,	Complied.
Georgetown Boot & Shoe Co.,	Boots and shoes,	24	1	–	–	Fair,	None,	–
WEST NEWBURY.								
S. C. Noyes & Co.,	Combs,	41	4	–	–	Fair,	None,	–
Chase & Co.,	Combs,	29	1	–	–	Fair,	None,	–
J. Durgin & Son,	Boots and shoes,	80	20	–	–	Fair,	None,	–

AMESBURY.								
Merrimac Hat Co.,	Felt and woollen hats,	140	50	7	Good,	None,		–
Biddle, Smart & Co.,	Carriages,	165	10	–	Good,	None,		–
S. R. Bailey & Co.,	Sleigh and carriage poles, etc.,	25	–	–	Good,	None,		–
Hamilton Woollen Co.,	Cassimeres and coatings,	258	416	65	Good,	None,		–
ANDOVER.								
Smith & Dove Manufacturing Co.,	Shoe thread and yarn,	7	53	18	Good,	None,		–
Smith & Dove Manufacturing Co.,	Shoe thread and yarn,	25	50	11	Fair,	None,		–
Smith & Dove Manufacturing Co.,	Shoe thread and yarn,	53	27	10	Fair,	None,		–
Marland Mills,	Fancy flannels,	115	85	16	Good,	Schooling certificate,		Complied.
Tyer Rubber Co.,	Rubber goods,	16	25	3	Fair,	Schooling certificate,		Complied.
Ballard Vale Mills,	Fine flannels,	90	90	15	Good,	None,		–
Craighead & Kintz,	Bronze lamps, etc.,	200	30	1 –	Fair,	None,		–

DISTRICT No. 9, ... JAMES H. CHADWICK, *Inspector*.

BROCKTON.								
A. L. Reed,	Button holes,	8	6	–	–	Fair,	None,	–
Geo. W. McLauthlin,	Shoes,	22	2	–	–	Fair,	None,	–
Smith & Perkins,	Box toes,	4	–	–	–	Fair,	None,	–
Robert Clifford,	Crimping,	4	–	–	–	Fair,	None,	–
F. L. Stone & Co.,	Machinists,	7	1		–	Fair,	None,	–
Reed Bros.,	Tacks and nails,	68	5	–	–	Good,	None,	–

DISTRICT No. 9 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 16.	14 to 16.			
Brockton — Concluded.								
Sherman & Edson,	Laundry,	7	4	–	–	Good,	None,	–
Leach & Co,	Tacks,	5	1	–	–	Good,	None,	–
Edward Sheehy,	Boots and shoes,	10	3	–	–	Good,	None,	–
Baxendale & Co,	Box toes,	22	2	–	–	Fair,	None,	–
Whitman & Keith,	Shoes,	148	42	–	4	Fair,	None,	–
Mitchell & Co,	Shoes,	35	8	–	–	Good,	None,	–
Woodard & Wright,	Lasts,	23	–	–	–	Fair,	None,	–
L. E. Keith,	Shoes,	32	6	–	–	Fair,	None,	–
H. C. Fuller,	Coloring, bleach'g,	12	3	–	–	Good,	None,	–
M. Pratt,	Foundry,	7	–	–	–	Good,	None,	–
Standard Rubber Co,	Rubber clothing,	27	78	–	4	Fair,	None,	–
Sidney E. Packard,	Paper boxes,	8	15	–	–	Good,	None,	–
Henry J. Miller,	Tacks,	9	1	–	1	Good,	None,	–
Edwin Keith,	Shoes,	37	9	–	–	Good,	None,	–
Walker, Taylor & Co,	Shoes,	30	18		1	Good,	None,	–
A. Barrow,	Shoes,	195	22	–	–	Good,	None,	–
Howard W. Reynolds,	Shoes,	45	16	–	–	Good,	None,	–
Preston B. Keith,	Shoes,	260	65	–	7	Good,	Fly-wheel to guard, certificates for children, sanitary,	Complied.
Thomas White,	Shoes,	122	38	–	6	Good,	None,	–
W. L. Douglas,	Shoes,	114	74	–	–	Good,	None,	–
J. A. Nelson,	Paper boxes,	20	40	1	4	Good,	Time tables to post,	–

E. M. Low,	Paper boxes,	20	40	1	4	Good,	None,	—
N. A Ransden,	Stitching,	1	11	–	–	Good,	None,	—
Shaw Bros.,	Shoes,	20	1	–	–	Good,	None,	—
D. K. Carpenter,	Heels,	3	12	–	–	Fair,	Sanitary,	—
Geo. F. Snow,	Shoes,	200	100	1	4	Good,	None,	—
Stacy, Adams & Co.,	Shoes,	207	48	–	–	Fair,	Sanitary,	—
J. S. Allen & Co.,	Shoes and boots,	103	30	–	–	Good,	Time tables to post,	—
H. F. Marshall,	Boots and shoes,	70	9	1	–	Good,	Sanitary, shafting to guard,	—
C. E. Leach & Co,	Shoes,	25	8	–	–	Good,	Sanitary, elevator gates,	—
Brockton Co-operative Co,	Shoes,	31	6	–	–	Fair,	Time tables to post, sanitary,	—
Kimball Bros,	Machinery,	9	–	–	–	Good,	Time tables to post, sanitary, shafting to guard,	—
H B. Reed & Co.,	Shoes,	138	21	–	–	Good,	None,	—
Lilly, Brackett & Co.,	Shoes,	176	21	–	–	Good,	None,	—
Thompson Bros.,	Shoes,	79	30	1	1	Good,	None,	—
S G. Jones,	Shoes,	69	22	–	–	Good,	None,	—
Geo E. Keith,	Shoes,	488	98	–	8	Fair,	None,	—
W. W. Cross & Co.,	Tacks,	11	1	–	–	Fair,	None,	—
Chas T. Field,	Heels,	8	–	–	–	Good,	None,	—
American Heeling Mfg. Co.,	Heeling machines,	20	–	–	–	Good,	None,	—
Drew & Whitney,	Heels,	20	10	–	–	Fair,	None,	—
BRAINTREE								
H. B Woodson & Co.,	Tacks & shoe nails,	12	3	–	–	Fair,	Sanitary, elevator safety, and guards,	Complied.
Columbia Rubber Co.,	Rubber clothing,	27	5	–	1	Fair,	Sanitary,	Complied.
Allen Fan Co,	Fans,	5	25	–	–	Good,	Sanitary,	Complied.
Jenkins' Manufacturing Co.,	Boot and shoe lacings,	14	14	–	–	Good,	Elevator gates,	Complied.
L. O. Crocker,	Conductors' punches,	7	–	–	–	Good,	None,	—
Strauss, Kinsley & Co.,	Shoddy,	8	2	–	–	Fair,	Time tables to post, sanitary,	Complied.

DISTRICT No. 9 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
Braintree — Concluded.								
Monattaquoit Mills,	Paper,	55	15	–	1	Good,	Shafting to guard, certificates for children,	Complied.
Williams, Keeland & Co.,	Shoes,	63	12	–	–	Good,	None,	–
Soule's Trunk Factory,	Leather trunks,	7	–	–	–	Good,	Elevator gates, safety device,	Complied.
Stevens & Willis,	Tacks and nails,	18	1	–	–	Good,	None,	–
Ames Shovel Works,	Shovels,	3	–	–	–	Good,	None,	–
Morrison Bros.,	Woollen yarns,	15	25	–	–	Good,	Belt to box,	Complied.
Drinkwater's Tannery,	Leather,	20	–	–	–	Good,	Elevator gates, belt and pulley to guard,	Complied.
John Long & Son,	Boots and shoes,	64	1	–	–	Fair,	None,	–
Redpath Bros.,	Boots and shoes,	46	4	–	–	Fair,	Time tables to post, sanitary,	Complied.
B. F. Smith,	Absorbent cotton,	5	–	–	–	Fair,	None,	–
BRIDGEWATER								
Bridgewater Spring Co.,	Springs, shoe shanks,	12	2	–	1	Fair,	Time tables to post, fly-wheel to guard,	Complied.
James Ferguson,	Valves,	6	–	–	–	Good,	Elevator safety,	Complied.
Eagle Cotton Gin Co.,	Cotton gins and boxes,	100	–	–	3	Good,	Elevator safety,	Complied.
Perkins Bros.,	Wire nails,	7	–	–	–	Good,	None,	–

Perkins Foundry,	Castings, machinists,	30	–		Good,	None,	–
ABINGTON.							
J. B. Lewis,	Boots and shoes,	20	4		Fair,	Time tables to post, sewing machine shafting to guard,	Complied.
Chas. E. Tucker & Co.,	Boots and shoes,	249	45	4	Good,	Time tables to post, sanitary provisions, sewing machine shafting to guard,	Complied.
Arnold Bros.,	Lasts,	9	– –	–	Fair,	None,	–
T. F. Giles,	Quilting of soles,	7	1 –	5	Good,	None,	–
M. Sullivan & Co.,	Boots and shoes,	20	5 –	–	Fair,	Time tables to post, sewing machine shafting to guard,	Complied.
Abington Tack Co.,	Tacks,	22	8 –	–	Fair,	None,	–
Baker & Whitmarsh,	Boots and shoes,	72	25 –	–	Good,	None,	–
W. S O'Brien,	Heels,	17	13 –	–	Fair,	Elevator gates,	Complied.
E. L Sprague,	Boots and shoes,	45	15 –	–	Good,	Sanitary,	Complied.
Kent & Brown,	Gloves & mittens,	9	16 –	–	Good,	– –	–
WEYMOUTH.							
J. E. Mann,	Wool scouring,	50	– –	–	Good,	Elevator gates,	Complied.
Strong & Carroll,	Boots and shoes,	225	60 –	6	Good,	Certificates for children, sanitary, elevator gates,	Complied.
Edwin Clapp,	Fine shoes,	172	48 –	5	Good,	Certificates for children, sanitary, elevator gates,	Complied.
M. Sheehy & Co.,	Boots and shoes,	65	10 –	–	Good,	Fly-wheel to guard,	Complied.
M Dizer & Co.,	Boots and shoes,	350	100 –	1	Good,	Fly-wheel to guard, sanitary,	Complied.
H. G Haskell,	Boots and shoes,	175	25 –	1	* –	Certificates for children, sanitary,	Complied.
Bradley Fertilizer Works,	Fertilizers,	200	2 –	–	Good,	None,	–
Bay State Hammock Co.,	Hammocks,	7	7 –	–	Good,	None,	–

* Not good.

DISTRICT No. 9 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
Weymouth — Concluded.								
S. Graves & Son,	Furniture,	12	–	–	–	Good,	None,	–
Geo. H. Becknell,	Counters & boxes,	51	–	–		Good,	None,	–
Fore River Engine Co.,	Machine shop,	44	–			Good,	None,	–
Howe & French,	Isinglass,	75	16		1	Good,	Certificates for children,	Complied.
J. W. Hart & Co.,	Boots and shoes,	72	20		1	–	Certificates for children,	Complied.
CANTON.								
Kinsley Iron Works,	Iron forgings,	210	–			Fair,	None,	–
American Twine Co.,	Twine,	60	32		6	Bad,	Time tables to post, sanitary, certificates for children, belt to box,	Complied.
Eureka Silk Mill, No. 1,	Sewing silk,	64	10		1	Good,	Certificates for children,	Complied.
Eureka Silk Mill, No. 2,	Sewing silk,	10	31			Good,	Certificates for children,	Complied.
Eureka Silk Mill, No 3,	Sewing silk,	20	167		1	Good,	Certificates for children,	Complied.
Eureka Silk Co.'s Dye House,	– –	25	–			–	None,	–
WRENTHAM.								
Cowell, Hall & Co.,	Jewelry,	30	8			Good,	Sanitary,	Complied.
Daniel Brown,	Straw goods,	125	80			Good,	Time tables to post, sanitary, shafting to guard,	Complied.
F. M. Fales & Co.,	Lumber and boxes,	27	–			Good,	None,	–

WALPOLE.								
Walpole Dyeing and Chemical Works,	Dyestuffs and chemicals,	26	2	–	–	Fair,	Time tables to post, sanitary, fly-wheel to guard,	Complied.
Bradford Lewis,	Binders' board (paper),	40	14	–	1	Bad,	Time tables to post, sanitary, fly-wheel to guard, elevator gates,	*
Willard Lewis,	Carpet lining (cotton),	29	6	–	2	Fair,	Sanitary,	Complied.
Walpole Machine Shop,	Jobbing shop,	8	–	–	–	Good,	None,	–
S. Gray & Co.,	Dyeing,	15	–	–	–	Good,	None,	–
S. Pember,	Stair pads (cotton),	7	7	–	–	Bad,	Sanitary, additional closets,	Complied.
AVON.								
L. G. Littlefield,	Shoes,	81	20	–	4	Fair,	Elevator safety, time tables to post, sanitary,	Complied.
E. Tucker & Son,	Boots and shoes,	115	35	–	–	Fair,	Belts to guard,	Complied.
DEDHAM.								
Merchants' Woollen Mill,	Woollens,	95	55	–	1	Bad,	Pulleys to guard, elevator guards, time tables to post,	Complied.
J. V. Abbott Manufacturing Co.,	Loom pickers, leather goods,	11	–	–	–	Good,	None,	–
Goding Bros.,	Grist mill, wood sawing,	5	–	–	–	Good,	None,	–
Dye House (Merchants' Woollen),	Dye house,	20	1	–	–	Good,	Time tables to post,	Complied.
Fred Page,	Suspenders,	4	1	–	–	Good,	None,	–
C. D. Brooks' Chocolate Works,	Chocolate,	4	3	–	–	Good,	Time tables to post,	Complied.

* Complied in part.

DISTRICT NO. 9 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	NUMBER EMPLOYED.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
Dedham — Concluded.								
Geo. W. Castor & Co.,	Cold-proof slippers,	2	15	–	2	Good,	Time tables to post, certificates for children,	–
MIDDLEBOROUGH.								
W. H. Schuelter & Co.,	Jewelry cases,	20	12	–	–	Good,	None,	–
Leonard & Barrows,	Shoes,	140	90	–	3	Fair,	Sanitary, time tables to post, shafting to guard,	Complied.
C. D. Kingman,	Shoes,	47	3	–	–	Good,	Time tables to post,	Complied
Bay State Straw Works,	Straw goods,	85	205	–	–	Good,	Sanitary, time tables to post,	Complied.
Star Mills,	Woollens,	72	15	–	9	Fair,	Sanitary,	Complied.
Murdock Parlor Grate Co,	Parlor grates, brass work,	35	–	–	–	Good,	None,	–
Frank Pease,	Heels, taps, insoles,	1	6	–	–	Good,	Time tables to post,	Complied.
Hathaway, Soule & Harrington,	Shoes,	60	15	–	–	Fair,	Sanitary, sewing machine shafting to guard,	Complied.
LeBarron Foundry Co,	Castings, patent ovens,	33	–	–	–	Good,	None,	–
Alden & Pratt,	Shoes,	35	5	–	–	Good,	Time tables to post,	Complied.
Keith & Pratt,	Shoes,	25	5	–	–	Good,	Time tables to post, shafting to guard,	Complied
Hammond & Richmond,	Shoes,	18	2	–	–	Good,	Time tables to post,	Complied.

HYDE PARK.								
Glover & Whitcomb,	Curled hair,	88	36	–	1	Good,	None,	–
Clifton Mfg. Co.,	Gossamer rubber,	9	–	–	–	Good,	Time tables to post, shafting and fly-wheel to guard,	Complied.
Mattapan Mills,	Paper,	34	32	–	–	Good,	Time tables to post, sanitary, elevator guards, set screws to guard,	Complied.
Boston Gossamer Rubber Co.,	Gossamer rubber,	28	4	–	–	Good,	Time tables to post, sanitary, shafting to guard,	Complied.
Readville Cotton Mills,	Cottons,	199	96	1	5	Fair,	Sanitary, certificates for children,	Complied.
Grey, Ward & Co.,	Shoddy,	17	4	–	2	Fair,	Machinery to guard, certificates for children,	Complied.
American Tool & Machine Co.,	Machinery,	130	–	–	–	Good,	None,	–
American Tool & Foundry Co.,	Castings,	70	–	–	–	Good,	None,	–
Hood & Reynolds,	Dental tools,	14	–	–	1	Fair,	Time tables to post, certificates for children,	Complied.
A. J. Wilkinson & Co.,	Machinists' small tools,	9	–	–	1	Fair,	Time tables to post, certificates for children,	Complied.
E. L. Lestie,	Stair builder,	5	–	–	1	Fair,	Time tables to post, certificates for children, fly-wheel and belt to guard,	Complied.
Hyde Park Steam Laundry,	Laundry,	3	7	–	1	Fair,	Time tables to post, sanitary, pulley and belt to guard,	Complied.
J. M. Porter,	Starch,	5	–	–	–	Good,	None,	–
John Scott,	Wool scouring,	20	–	–	–	Good,	Belt to guard,	Complied.
Randall & Langley,	Printing,	5	2	–	1	Fair,	Time tables to post, belt and wheel to guard,	Complied.
S. A. M. Moseley,	Printing,	5	–	–	–	Fair,	Time tables to post,	Complied.
Brainard Milling Machine Co.,	Milling machines, tools,	70	–	–	–	Good,	None,	–
Boston Blower Works,	Machinery, fans,	56	–	–	1	Good,	None,	–

DISTRICT NO. 9 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	NUMBER EMPLOYED.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
Hyde Park — Concluded.								
John M. Bullard,	Grist mill,	2	–	–	–	Good,	Fly-wheel and belt to guard,	Complied.
Hyde Park Electric Light & Power Co,	Electricity,	3	–			Good,	Belts to guard,	Complied.
FOXBOROUGH.								
Union Straw Works,	Straw goods,	214	254		5	Good,	Certificates for children,	Complied.
A. H. & A. F. Young,	Coloring and bleaching,	11	–		1	Good,	Certificates for children,	Complied.
Foxborough Steam Laundry,	Laundry,	6	8			Good,	Time tables to post,	Complied.
Foxborough Foundry & Machine Co.,	Steam heaters,	35	–			Good,	None,	–
KINGSTON.								
L. E. Ford & Co.,	Tacks,	7	1		1	Fair,	None,	–
J. W. Delano,	Rivets and burrs,	3	–			Fair,	None,	–
H. C. & W. S Cole,	Tacks,	7	1			Fair,	None,	–
C. Drew & Co.,	Mechanics' small tools,	8	–			Fair,	None,	–
Old Colony Rivet Co.,	Rivets,	11	1			Fair,	None,	–
Stetson & Woodard,	Tacks and small nails,	7	1		1	Fair,	Fly-wheel to guard, certificates for children,	Complied.

Cobb & Drew,	Tacks and small nails,	59	3	–	1	Fair,	None,	–
HOLBROOK.								
Thomas White,	Boots and shoes,	300	50	–	6	Bad,	Sanitary, certificates for children,	–
Royal Thayer & Son,	Shoe strings,	19	13	–	–	Fair,	None,	–
Edmund White,	Boots and shoes,	225	34	–	–	Good,	Time tables to post, sanitary,	–
Whitcomb & Paine,	Boots and shoes,	250	13	–	1	Good,	Sanitary,	–
HANOVER.								
N. V Goodrich,	Shoes,	50	25	–	–	Good,	Fly-wheel and shafting to guard,	Complied.
Studley & Allison,	Shoes,	10	5	–	–	Good,	Time tables to post, belt to box,	Complied.
C. A Mann,	Shoes,	10	2	–	–	Good,	Time tables to post,	Complied.
W. E. Studley,	Shoes,	29	4	–	–	Good,	Time tables to post,	Complied.
Killam & Turner,	Boots and shoes,	15	3	–	1	Good,	None,	–
NORWELL.								
E. W. Sparrell,	Coffins and caskets,	4	–	–	–	Good,	None,	–
Tenney's Mill,	Saw mill,	4	–	–	–	Good,	None,	–
G. W H Litchfield,	Shoes,	70	25	–	–	Good,	Time tables to post, sanitary,	Complied.
C. C. Young,	Shoes,	29	5	–	–	Good,	Time tables to post,	Complied.
C. Gross & Sons,	Boots and shoes,	105	20	–	–	Good,	None,	–
Curtis Brothers,	Boots and shoes,	30	5	–	–	Good,	None,	–
MILTON.								
Walter Baker & Co.,	Chocolate,	37	30	–	–	–	None,	–
Walter Baker & Co. (Ware Mill),	Chocolate,	5	–	–	–	–	None,	–
T. Strangman & Co.,	Carriages,	26	–	–	–	–	None,	–
HINGHAM.								
Burr, Brown & Co.,	Fringes,	15	45	–	3	Good,	Sanitary,	Complied.
James Dower & Son,	Ropes,	7	–	2	–	–	None,	–

DISTRICT NO. 9 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	NUMBER EMPLOYED.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
PLYMOUTH.								
Plymouth Woollen Co.,	Woollens,	72	38		5	Good,	None,	–
Francis T. Emory,	Boots and shoes,	192	44			Good,	Sanitary, shafting, communication to engine room,	Complied.
Plymouth Foundry Co.,	Stoves and ranges,	60	–		1	Good,	None,	–
Plymouth Steam Laundry,	Laundry,	2	7			Bad,	Time tables to post, additional sanitary,	Complied.
Bradford & Morton,	Covering wire,	2	3			Good,	Shafting to guard,	Complied.
Robinson Iron Co.,	Iron,	35	–			Good,	None,	–
Plymouth Mills,	Tacks, rivets, small nails,	45	7		1	Good,	Time tables to post,	Complied.
Plymouth Straw Works,	Straw goods,	10	65			Good,	Sewing machine shafting to guard,	Complied.
Russell Mills,	Cottons,	52	32		5	Good,	None,	–
Hayden Mills,	Cottons,	20	7			Fair,	None,	–
E. L. Leeds,	Copper and zinc nails,	10	–		1	Fair,	None,	–
Plymouth Cordage Co.,	Ropes, cordage,	400	55	5	37	Fair,	None,	–
NORTH SCITUATE.								
S. G. W. Lee,	Seam stays,	4	–			Good,	None,	–
F. W. Varney,	Congress boots,	7	–			Good,	None,	–
G. W. Litchfield,	Shoes,	12	–			Good,	None,	–
T. C. Bailey & Co.,	Shoes,	12	2			Good,	Time tables to post,	Complied.

G. W. Bailey,	Shoes,	38	2	–	–	Good,	Time tables to post,	Complied.
QUINCY.								
Franklin Curtis,	Boots and shoes,	4	–	–	–	Fair,	None,	–
Thomas Curtis,	Boots and shoes,	7	–	–	–	Fair,	None,	–
Rice & Hutchins,	Boots and shoes,	81	20	–	–	Fair,	None,	–
Graham & Co,	Boots and shoes,	44	5	–	–	Good,	None,	–
Whicher & Co.,	Boots and shoes,	133	21	–	5	Good,	None,	–
M. Curtis & Co,	Boots and shoes,	22	4	–	–	Good,	None,	–
Badger Brothers,	Machine shop, stone polishing,	27	–	–	–	Fair,	None,	–
E. W. Gourd,	Hosiery,	5	21	–	–	Fair,	None,	–
Wollaston Steam Laundry,	Laundry,	3	20	–	1	Good,	None,	–
Tubular Rivet Co.,	Rivets,	65	23	–	–	Good,	None,	–
Mellen, Bray & Co.,	Glove fasteners,	1	20	–	–	Good,	None,	–
Thayer Heater Co.,	Steam heaters,	10	–	–	–	Good,	None,	–
Wollaston Iron Foundry,	Castings,	60	–	–	–	Fair,	None,	–
STOUGHTON.								
Wallace, Elliott & Co.,	Shoes,	92	23	–	–	Good,	Fly-wheel to guard,	Complied.
F. M. Packard,	Shoes,	31	6	–	–	Good,	None,	–
Novelty Paper Box Co.,	Paper boxes,	2	18	–	–	Good,	None,	–
J. & H. Fitzpatrick,	Boots and shoes,	87	15	–	–	Good,	Sanitary,	Complied.
Stoughton Rubber Co.,	Rubber clothing,	40	11	1	–	Good,	Sanitary, certificates for children,	Complied.
J. G. Phinney Counter Co.,	Boot and shoe counters,	121	51	–	32	Good,	Certificates,	Complied.
ROCKLAND.								
Burrell & Houghton,	Shoes,	105	20	–	–	Good,	None,	–
Henry D. Smith,	Knit goods,	14	4	–	1	Good,	None,	–
Jason Smith,	Machinery,	8	–	–	–	Good,	None,	–
Rockland Co,	Boots and shoes,	140	12	–	1	Good,	None,	–

DISTRICT NO. 9 — *Concluded.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	NUMBER EMPLOYED.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
Rockland — Concluded.								
F. E. Nesmith,	Paper boxes,	6	34	–	–	Good,	None,	–
Elisha T. Howe,	Boots and shoes,	126	12	–	1	Good,	None,	–
Torrey & Gurney,	Boots and shoes,	21	2	–	1	Good,	None,	–
WHITMAN.								
Whitman Paper Box Co.,	Paper boxes,	10	50	–	–	Fair,	Sanitary, time tables to post, shafting to guard,	Complied.
Bryant & King,	Cutting of calf-skins,	17	–	–	–	Fair,	None,	–
J. W. Coombs,	Cutting of calf-skins,	7	–	–	–	Good,	None,	–
J. Q. A. Healey,	Mats,	3	–	–	–	Good,	None,	–
G. A. Gurney,	Steel shoe shanks,	14	5	–	2	Fair,	None,	–
Walter Trufoot,	Small nails,	5	–	–	–	Fair,	None,	–
F. M. Spencer,	Boxes,	20	–	–	–	Good,	None,	–
C. H. Bonney,	Wood working,	7	–	–	–	Good,	None,	–
A. A. Healey,	Sheet heeling,	1	4	–	–	Good,	None,	–
D. B. Gurney,	Tacks and small nails,	37	3	–	5	Fair,	None,	–
Jenkins Bros. & Co.,	Caskets, coffins, steel shanks,	22	3	–	1	Good,	Certificates for children,	Complied.
A. R. Jones,	Boots and shoes,	220	130	–	4	Good,	None,	–

Atwood Bros.,	Boxes,	49	–	–	–	Good,	None,	–
Dunbar & Rhoades,	Eyelets,	31	9	–	–	Good,	Shafting to guard,	Complied.
Smith & Stoughton,	Shoes,	106	26	–	–	Good,	None,	–
Dunbar, Hobart & Co.,	Tacks and small nails,	125	50	–	1	Fair,	None,	–
RANDOLPH.								
John Peach,	Shoes,	250	80	–	1	Good,	Certificates for children,	Complied.
William P. O'Brien,	Shoes,	85	4	–	–	Good,	Sanitary, time tables to post,	Complied.
W. F. Barrett,	Boots and shoes,	18	–	–	–	Good,	None,	–
W. Gibbons,	Boots and shoes,	22	3	–	–	Good,	–	–
Bryant, Case & Co.,	Shoes,	65	10	–	4	Good,	Certificates for children,	Complied.

DISTRICT No. 10, ... **FRANK H. MORTON, *Inspector*.**

SOUTH DEERFIELD.								
J. B. Bridges & Co.,	Grist and saw mill,	6	–	–	–	Good,	Guard belt,	Complied.
D. B. Arms,	Specie purses,	3	7	–	–	Good,	Time notice,	Complied.
Arms Manufacturing Co.,	Pocketbooks,	15	30	–	2	Good,	Time notice, certificate, designate water closet,	Complied.
Fisher Bros.,	Saw and shingle mill,	4	–	–	–	Good,	Guard belt,	Complied.
Arms Manufacturing Co.,	Pocketbooks,	20	25	–	2	Good,	Guard belt, time notice,	–
D. B. Arms,	Pocket purses,	4	6	–	–	Good,	None,	–
J. B. Bridges & Co.,	Grist and saw mill,	6	–	–	–	Good,	None,	–
WENDELL.								
Goddard Pulp Mill,	Wood pulp,	6	–	–	–	Fair,	None,	–
Farley Paper Co.,	Card paper,	13	–	–	–	Fair,	None,	–

DISTRICT No. 10 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
Wendell — Concluded.								
Farley Paper Co, New Mill, .	Card paper, . .	17	–	–	1	Good, .	Guard belts and gears, certificates, time notice, ...	Complied.
C. S. Stone, ...	Piano cases, . .	35	–	–	–	Good, .	None, ...	–
WILLIAMSTOWN.								
Williamstown Mfg Co., . .	Print cloth, . .	65	135	–	30	Fair, .	None, ...	–
Fitchburg Railroad Co., . .	Repair shop, .	12	–	–	–	Good, .	None, ...	–
Williamstown Mfg. Co., . .	Print cloth, . .	80	110	2	25	Fair, .	None, ...	–
WHATELY.								
Eugene Wood, ...	Brooms, . .	5	–	–	–	Good, .	None, ...	–
SOUTH EGREMONT.								
Dalzell Axle Works, . . .	Carriage axles, .	50	–	–	–	Good, .	Guard elevator opening and belt, .	Complied.
SHELBURNE.								
Mayhew Silk Co., . . .	Machine twist, .	9	44	–	5	Good, .	None, ...	–
Goodell Bros, ...	Tools and light hardware, . .	5	–	–	3	Good, .	Certificates and time notice, . .	Complied.
H. H. Mayhew Co., . . .	H'rdware and tools,	27	–	–	1	Good, .	Certificate, ...	Complied.
D. Rush & Sons, ...	Cigar and butter boxes, . .	6	2	–	1	Good, .	Guard belt, certificate, designate water closets, ...	Complied.

E. C. Richmond,	Shingles,	4	–	–	–	Good,	Guard belt,	Complied.
Frost & Bartlett,	Grist and saw mill,	5	–	–	–	Good,	None,	–
Shelburne Falls Paper Box Co.,	Paper boxes,	1	7	–	–	Good,	None,	–
Mayhew Silk Co.,	Machine twist,	8	52	–	10	Good,	None,	–
D. Rush & Sons,	Cigar and butter boxes,	4	1	–	–	Good,	None,	–
E. C. Richmond,	Shingles,	4	–	–	–	Good,	None,	–
Frost & Bartlett,	Saw and grist mill,	3	–	–	–	Good,	None,	–
Goodell Bros.,	Light hardware,	5	–	–	2	Good,	None,	–
H. H. Mayhew & Co.,	H'rdware and tools,	30	–	–	–	Good,	None,	–
Stockbridge.								
Glendale Mills,	Woollen goods,	19	11	–	–	Fair,	Designate water closets, guard belt,	Complied.
Calendar's Paper Mill,	Manilla paper,	37	4	–	–	Fair,	Designate water closets, time notice,	Complied.
Glendale Mills,	Woollen goods,	63	29	–	–	Fair,	Time notice,	Complied.
Calendar's Paper Mill,	Manilla paper,	36	6	–	–	Good,	Guard belt and time notice,	Complied.
City of Pittsfield.								
Real Pen Work Publishing Co.,	Real pen work books,	1	6	–	–	Good,	None,	–
Shaker Mill,	Flour and feed,	3	–	–	–	Good,	None,	–
Tillotson & Power, Shoddy Mill,	Shoddy,	4	–	–	1	Good,	Time notice,	Complied.
Tillotson & Power,	Woollen goods,	170	60	–	11	Good,	Time notice,	Complied.
Russell & Jones Clock Co.,	Clocks,	90	10	–	5	Good,	Guard belt and band saw,	Complied.
Pittsfield Tack Co,	Tacks,	12	2	–	2	Good,	Certificates,	Complied.
Berkshire Overall Co.,	Clothing,	5	21	–	1	Good,	None,	–
Morse Bros.,	Silver plating,	2	–	–	–	Good,	None,	–
Sisson & Robinson,	Paper boxes,	2	12	–	1	Good,	None,	–
Peck's Upper Mill,	Flannels,	83	44	–	8	Good,	None,	–

DISTRICT No. 10 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
City of Pittsfield — Continued.								
Peck's Lower Mill,	Cotton warp,	73	58	1	21	Fair,	None,	–
S. N. & C. Russell Mf'g. Co.,	Woollen goods,	160	80	2	21	Good,	None,	–
T. R. Glentz,	Finished lumber,	30	–	–	–	Good,	None,	–
Z. A. Ward,	Art furniture,	8	–	–	–	Good,	Guard belt,	Complied.
Pittsfield Carriage Co.,	Carriages,	10	–	–	–	Good,	None,	–
Teconic Mill,	Woollen goods,	120	80	1	15	Good,	Certificate and time notice,	Complied.
Pontoosuc Woollen Mf'g. Co.,	Woollen goods,	150	100	1	16	Good,	Guard belt and time notice,	Complied.
Bel Air Manufacturing Co.,	Woollen goods,	100	100	–	21	Good,	None,	–
William Clark & Co.,	Paper mill machinery,	45	–	–	–	Good,	None,	–
Bel Air Manufacturing Co.,	Woollen goods,	108	100	4	17	Good,	Certificates, guard crank arm, repair elevator and safety catch,	Complied.
Pittsfield Carriage Co.,	Carriages,	7	–	–	–	Good,	Guard set screws,	Complied.
E. D. Jones,	Millwright,	10	–	–	–	Good,	None,	–
Robbins & Kellogg,	Shoes,	130	95	–	7	Good,	Certificates, time notice,	Complied.
May & Chapel,	Machinery,	12	–	–	–	Good,	Guard set screws,	Complied.
Henry & Blain,	Rag shop,	6	6	–	1	Good,	Certificates, time notice,	Complied.
New York Laundry,	Laundry work,	6	1	–	–	Good,	Time notice,	Complied.
A. H. Rice & Co.,	Silk thread and braid,	12	47	–	7	Good,	Certificate, guard fly-wheel,	Complied.
R. P. Purdy,	Paper boxes,	1	5	–	–	Good,	None,	–
H. S. Russell & Co.,	Boilers,	14	–	–	–	Good,	None,	–

Franklin Steam Laundry,	Laundry work,	6	8	–	–	Good,	Time notice,	Complied.
Berkshire County Eagle,	Newspaper and job print,	12	4	–	–	Good,	Time notice, designate water closet,	Complied.
C. E. Merrill,	Sash, doors and carpenter work,	60	–	–	–	Good,	Guard belt,	Complied.
Pittsfield Electric Light Co.,	Electric light,	3	–	–	–	Good,	None,	–
Owen Coogan & Sons,	Leather,	20	–	–	–	Fair,	Guard set screws,	Complied.
W. C. Stephenson Mfg. Co,	Shuttles, spools and reeds,	36	–	–	–	Good,	None,	–
Russell & Brown Co.,	Knit goods,	14	31	–	2	Good,	Time notice, certificates, designate water closets,	Complied.
F. A Robbins,	Envelopes,	2	8	–	–	Good,	None,	–
D M Collins & Co.,	Paper boxes,	6	6	–	–	Good,	None,	–
Berkshire Knitting Mill,	Underwear,	20	180	–	5	Good,	Certificates,	Complied.
Sprague, Brimmer & Co,	Shirts,	15	110	–	7	Good,	Guard belt,	Complied.
Pittsfield Yarn Mfg. Co.,	Woollen yarns,	24	–	–	2	Fair,	Guard belt,	Complied.
Farrell & May Shoe Co.,	Shoes,	44	6	–	–	Good,	None,	–
Pittsfield Evening Journal,	Newspaper and printing,	4	4	–	–	Good,	None,	–
Farrell & May Shoe Co.,	Shoes,	24	6	–	–	Good,	Guard set screws, time notice, designate water closets, unlock doors,	Complied.
Pittsfield Manufacturing Co.,	Woollen yarns,	10	–	–	–	Good,	None,	–
Berkshire County Eagle,	Newspaper and printing,	13	2	–	–	Good,	Designate water closets,	Complied.
Willey Robinson Mfg. Co.,	Shirts, col'rs, cuffs,							
	Wholesale grocers,	5	20	–	–	Good,	Designate water closets,	Complied.
Carey & Baker,	Newspaper and	3	–	–	–	Good,	Repair elevator gates,	Complied.
Pittsfield Evening Journal,	job print,	10	3	–	–	Good,	Designate water closet, time notice, repair elevator gates,	Complied.
Real Pen Work Publishing Co.,	Books on pen work,	3	6	–	1	Good,	Certificates, time notice, designate water closets,	Complied.

DISTRICT No. 10 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	NUMBER EMPLOYED.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
City of Pittsfield — Concluded.								
Gimlich, White & Co,	Ale and lager brewery,	14	–	–	–	Good,	None,	–
Pittsfield Tack Co,	Tacks,	22	3	–	1	Good,	Time notice,	Complied.
Russell & Jones Clock Co.,	Clocks,	79	11	–	4	Good,	Time notice,	Complied.
Peck's Upper Mill,	Shirtings,	124	45	–	8	Good,	Guard belt, time notice, designate water closet,	Complied.
S. H. & C. Russell Mfg. Co.,	Woollen cassimeres,	130	100	2	32	Good,	Designate water closets, certificates,	Complied.
Peck's Lower Mill,	Cotton warp,	65	55	1	17	Good,	Better water closet, certificates, guard fly-wheel,	Complied.
Government Mill,	Bond paper,	12	6	–	–	Good,	None,	–
J. Barker & Bro. Mfg. Co., Upper Mill,	Woollen goods,	115	60	–	19	Poor,	Sanitary, notice, certificates,	Complied.
J. Barker & Bro Mfg. Co., Lower Mill,	Woollen goods,	5	–	–	–	Fair,	None,	–
Tillotson & Power Mfg Co.,	Woollen goods,	160	40	1	11	Good,	Guard set screws,	Complied.
Robbins, Gamewell & Co,	Steam and gas fittings,	22	–	–	–	Good,	None,	–
Berkshire Overall Co.,	Overalls,	8	20	–	2	Good,	Certificates,	Complied.
Morse Brothers,	Silver platers,	2	–	–	–	Good,	None,	–
Pontoosuc Woollen Mfg. Co.,	Woollen blankets,	125	125	2	10	Good,	Certificates,	Complied.
Z. A. Ward,	Planing mill,	10	–	–	–	Good,	None,	–

T. R. Glentz,	Contractor and stair builder,	30	–	–	–	Good,	Provide water closet, guard stair opening,	Complied.
Taconic Mill,	Cassimeres and cloakings,	120	90	–	14	Good,	Better water closets,	Complied.
H D. Sissons, Jr.,	Paper boxes,	4	16	–	2	Good,	Certificates,	Complied.
Orange.								
H. R. Stowell,	Furniture,	23	–	–	–	Good,	Guard belt,	Complied.
J. B. Reynolds,	Shoes,	120	30	1	5	Good,	Certificates,	Complied.
Chase Turbine Mfg. Co.,	Water-wheels,	40	–	–	–	Good,	None,	–
Orange Furniture Co.,	Furniture,	20	–	–	1	Fair,	Certificate and time notice, guard opening in floor in attic,	Complied.
Geo. A. Lawrence,	Planing mill and box shop,	6	–	–	–	Good,	None,	–
New Home Sewing Machine Co.,	Sewing machine cabinets,	40	–	–	1	Good,	Certificate, time notice,	Complied.
Frank Fitts,	Wood & kindlings,	1	–	–	–	Good,	Guard set screws,	Complied.
Troy Steam Laundry,	Laundry,	2	3	–	–	Good,	Guard set screws,	Complied.
Orange Journal,	Newspaper,	2	1	–	–	Good,	Guard set screws,	Complied.
Rodney Hunt Machine Co.,	Water wheels and woollen machinery,	125	–	–	–	Good,	None,	–
Orange Electric Light Co.,	Electricity,	3	–	–	–	Good,	None,	–
J. H. Clark,	Grist mill,	1	–	–	–	Good,	None,	–
New Home Sewing Machine Co.,	Sewing machines,	450	–	–	–	Good,	Certificate, time notice,	Complied.
H. R. Stowell,	Furniture,	22	–	–	–	Good,	Guard belt,	Complied.
H. R. Stowell,	Paint shop,	6	–	–	–	Good,	None,	–
J. B. Reynolds,	Shoes,	125	35	1	10	Good,	None,	–
Orange Furniture Co.,	Furniture,	22	–	–	1	Good,	None,	–
Chase Turbine Mfg. Co.,	Water wheels and saw mills,	45	–	–	1	Good,	Time notice,	Complied.

DISTRICT No. 10 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	NUMBER EMPLOYED.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
Orange — Concluded.								
New Home Sewing Machine Co.,	Sewing machine cabinets,	58	–			Good,	None,	–
New Home Sewing Machine Co.,	Sewing machines,	395	–			Good,	Time notice,	Complied.
Rodney Hunt Machine Co.,	Water wheels and woollen machinery,	125	–			Good,	None,	–
Orange Electric Light Co.,	Electric light,	3	–			Good,	None,	–
Troy Steam Laundry,	Laundry,	5	3			Good,	Time notice,	Complied.
Orange Journal	Newspaper and printing,	3	1			Good,	None,	–
Geo Lawrence,	Packing boxes,	6	–			Good,	None,	–
Geo. W. Bingham,	Shoe button holes,	1	7			Good,	None,	–
NORTH ADAMS.								
H. L. Millard,	Shoes,	70	30	2	9	Fair,	Repair safety catch,	Complied.
D. J. Barber,	Tannery,	20	–			Good,	None,	–
H. T. Cady,	Shoes,	75	75	1	20	Fair,	Certificates and time notice,	Complied.
Johnson Mfg Co.,	Ginghams,	110	179	2	27	Good,	None,	–
C. T. Sampson Mfg. Co.,	Shoes,	150	60	1	13	Good,	Certificates,	Complied.
Stone Mill,	Print cloth,	3	24		1	Good,	None,	–
Esty Mill,	Cotton warp,	8	28		10	Good,	None,	–

Eagle Mill,	Print cloth,	120	60	7	3	Fair,	Designate water closet,	-
Arnold Print Works,	Calicoes,	690	84	3	84	Good,	None,	-
North Adams Milling Co.,	Marble dust,	8	-			Good,	None,	-
Beaver Mills,	Print cloth,	64	56	5	33	Fair,	None,	-
North Adams Mfg. Co,	Woollen goods,	130	62		19	Good,	None,	-
Esty Mill,	Cotton yarn,	13	19	1	12	Good,	None,	-
H. T. Cady,	Shoes,	80	70		8	Fair,	Guard fly-wheel, certificates, designate water closets,	Complied.
Eagle Mill,	Print cloth,	40	60		16	Good,	Designate water closets, certificates,	Complied.
Greylock Mill, No. 1,	Ginghams,	160	130	3	90	Good,	Time notice,	Complied.
Freeman Manufacturing Co.,	Calicoes,	362	56	1	57	Good,	Repair safety catch,	Complied.
H. R. Hamer,	Washing machines,	2	-			Good,	None,	-
T. P. Snyder,	Mouldings,	3	-			Good,	None,	-
Henry's Laundry,	Laundry,	6	7			Good,	Designate water closets, time notice,	Complied.
North Adams Transcript,	Newspaper,	17	-			Good,	None,	-
F. R. R. Electric Light Station,	Electricity,	5	-			Good,	None,	-
North Adams Manufacturing Co.,	Woollen goods,	125	75	4	17	Good,	None,	-
S. B. Dibble,	Sash, doors and blinds,	19	-			Good,	None,	-
H. W. Scott,	Carpenter shop,	25	-			Good,	Guard belts,	Complied.
P. G. Gardner & Co.,	Electric fuses,	6	-			Good,	None,	-
F. E. Brigham,	Brooms & brushes,	5	-			Good,	None,	-
Bartlett Bros,	Planing mill,	10	-			Good,	None,	-
North Adams Electric Light Co.,	Electricity,	2	-		1	Good,	Certificate and time notice,	Complied.
Blackinton Woollen Co.,	Woollen goods,	226	118	4	20	Good,	Designate water closets,	Complied.
D. W. Rising,	Paper boxes,	3	22			Good,	None,	-
Waldron & Crawley,	Job printers,	3	-		1	Good,	Time notice,	Complied.
E. J. Cary,	Paper stock,	6	31		5	Fair,	None,	-
Eclipse Mill,	Print cloth,	60	80	3	17	Fair,	Repair safety catch,	Complied.
R. S. Nichols,	Leather rolls,	5	-			Fair,	None,	-

DISTRICT NO. 10 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	NUMBER EMPLOYED.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 16.	16 to 16.			
North Adams — Concluded.								
Canedy & Wilkinson,	Shoes,	120	80	1	24	Good,	Time notice,	Complied.
W. G Cady & Co.,	Shoes,	45	33	–	6	Good,	None,	–
Greylock Mills,	Ginghams,	150	150	1	34	Good,	Guard belt, certificate, time notice,	Complied.
North Adams Manufacturing Co.,	Woollen goods,	125	75	1	17	Good,	Guard crank arm, certificates, designate water closets, guard set screws,	Complied.
Walden & Crawley,	Printers,	3	–	–	–	Good,	None,	–
Advance Job Printing Co.,	Printers,	5	1	–	2	Good,	Certificate, time notice,	Complied.
Sunday Express,	Newspaper,	4	–	–	–	Good,	Guard set screws,	Complied.
Hoosac Valley News,	Newspaper,	12	–	–	–	Good,	None,	–
W. G. Cady & Co.,	Shoes,	160	95	2	18	Good,	Certificate, designate water closets, additional water closet, guard set screws,	Complied.
Whitman, Canedy & Co.,	Shoes,	80	70	1	12	Good,	Certificates, guard set screws,	Complied.
H. L. Millard,	Shoes,	120	80	2	19	Fair,	Certificates,	Complied.
D. J. Barber,	Leather,	20	–	–	–	Fair,	None,	–
M. D. & A. W. Hodge,	Flouring mill,	8	–	–	–	Good,	Guard opening in floor,	Complied.
S. Blackinton Woollen Co.,	Woollen goods,	236	114	–	34	Good,	Certificates,	Complied.
Beaver Mill,	Print cloth,	45	75	–	19	Fair,	Certificates,	Complied.
North Adams Milling Co.,	Marble dust,	12	–	–	–	Good,	Guard belts,	Complied.
E. J. Cary,	Paper stock,	7	38	–	4	Fair,	None,	–
E. R. Hayden,	Paper boxes,	2	4	–	–	Good,	None,	–

Johnson Manufacturing Co.,	Ginghams,	100	200	–	33	Good,	Certificates,	Complied.
J. M Barber,	Carriages,	6	–	–	–	Good,	None,	–
D. W. Rising,	Paper boxes,	3	17	–	–	Good,	Provide additional water closet,	Complied.
North Adams Electric Light Co.,	Electricity,	1	–	–	–	Good,	None,	–
Eclipse Mill,	Print cloth,	40	160	–	23	Fair,	Repair safety catch, repair elevator rope,	Complied.
R. L. Nichols,	Roll covers,	5	–	–	–	Fair,	None,	–
Arnold Print Works,	Calicoes,	556	66	9	61	Good,	None,	–
C. T. Sampson Mfg. Co.,	Shoes,	234	116	1	30	Good	Designate water closets,	Complied.
Stone Mill,	Print cloth,	5	22	–	–	Good,	Time notice, designate water closets, repair safety device on elevator,	Complied.
MONTAGUE								
Wheeler's Knitting Mill,	Stockings & shirts,	1	11	–	–	Good,	Better water closet, guard shafting and set screws,	Complied.
Montague City Rod Co.,	Fishing rods,	21	4	–	–	Good,	None,	–
John Russell Cutlery Co.,	Table cutlery,	516	64	1	65	Good,	Certificates,	Complied.
Shawmut Manufacturing Co.,	Leatherette,	6	–	–	–	Good,	None,	–
Montague Paper Co.,	Newspaper,	190	30	–	–	Good,	Time notice, guard opening in floor, guard fly-wheel and set screws,	Complied.
Clark Manufacturing Co.,	Water wheels and pump,	28	–	–	–	Good,	None,	–
Franklin Electric Light Co.,	Electricity,	1	–	–	–	Good,	None,	–
Geo. F Littlefield Shoe Co.,	Shoes,	54	9	–	1	Good,	Guard fly-wheel, guard belt, better water closet, time notice, certificate,	Complied.
Turner's Falls Cotton Co.,	Cotton goods,	85	90	10	40	Good,	Guard belt, certificate,	Complied.
Keith Paper Co.,	Writing paper,	75	100	–	–	Good,	None,	–
Turner's Falls Paper Co.,	Newspaper,	50	10	–	–	Good,	Guard set screws, provide safety device for elevator,	Complied.
MONROE								
James Ramage Paper Co.,	Wood pulp,	20	–	–	–	Good,	None,	–
James Ramage Paper Co.,	Box paper,	18	–	–	–	Good,	Guard belts,	Complied.

DISTRICT No. 10 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	NUMBER EMPLOYED.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
Monroe — Concluded.								
James Ramage Paper Co.,	Wood pulp,	20	–	–	–	Good,	None,	–
James Ramage Paper Co.,	Box paper,	18	–	–	–	Good,	None,	–
NORTHFIELD.								
Ansel Dickinson,	Rough lumber,	5	–	–	–	Good,	Guard belt,	Complied.
Lewis Fowler,	Rough lumber,	4	–	–	–	Good,	None,	–
Geo. J. Bacon,	Grist mill,	1	–	–	–	Good,	None,	–
LEE.								
Hurlbut Paper Mfg. Co.,	Writing paper,	60	120	–	5	Good,	Certificates, guard set screws,	Complied.
E. & S. May Paper Co.,	Writing paper,	18	25	–	–	Good,	None,	–
Eagle Mill,	Manilla paper,	14	14	–	–	Fair,	Guard set screws,	Complied.
Columbia Mill,	Manilla paper,	23	18	–	3	Good,	Guard set screws, repair elevator, designate water closets,	Complied.
Housatonic Mill,	Newspaper,	25	20	–	–	Good,	Designate water closets,	Complied.
Valley Mill,	News and book paper,	25	17	–	–	Good,	None,	–
Benton Bros,	Writing paper,	11	14	–	–	Good,	None,	–
P. C. Baird,	Chromo and blotting paper,	9	6	–	–	Good,	Guard set screws,	Complied.
P. C. Baird,	Rag and wash mill,	3	11	1	–	Fair,	Certificate,	Complied.

John McLaughlin,	Machine shop and saw mill,	6	–	–	–	Good,	Guard circular-saw belt,	Complied.
E. P. Tanner,	Machine shop,	25	–	–	–	Good,	None,	–
Hurlbut Paper Mfg. Co.,	Writing paper,	65	100	2	8	Good,	Time notice,	Complied.
Columbia Mill,	Manilla paper,	41	16	–	1	Good,	None,	–
Eagle Mill,	Manilla paper,	27	9	–	–	Fair,	None,	–
Housatonic Mill,	Newspaper,	20	16	–	–	Good,	None,	–
Smith Paper Co. Machine Shop,	Machinery,	13	–	–	–	Good,	None,	–
E. P. Tanner,	Paper mill machinery,	24	–	–	–	Good,	Guard pressure blower,	Complied.
John McLaughlin,	Sawmill and machine shop,	5	–	–	–	Good,	None,	–
Benton Bros.,	Ledger and flat paper,	13	12	–	–	Good,	None,	–
P. C. Baird,	Chromo and blotting paper,	9	4	–	–	Good,	None,	–
P. C. Baird,	Rag mill and wash mill,	6	9	–	–	Fair,	None,	–
E. & S. May Paper Co.,	Writing paper,	17	22	–	–	Good,	None,	–
Howk & Duclos,	Shirts,	1	19	–	–	Good,	None,	–
Thistle Wire Co.,	Fourdrinier wire,	12	2	–	1	Good,	Certificate and time notice, designate water closets,	–
Markham & Ellis,	Shirts,	1	14	–	1	Good,	Certificate and time notice,	Complied.
GILL								
Turner's Falls Lumber Co.,	Dimension lumber,	45	–	–	–	Good,	None,	–
New England Fibre Co.,	Sulphite pulp,	40	–	–	–	Good,	Guard fly-wheel,	Complied.
New England Fibre Co.,	Sulphite pulp,	30	–	–	–	Good,	None,	–
Turner's Falls Lumber Co.,	Spruce lumber,	50	–	–	–	Good,	None,	–
Turner's Falls Lumber Co.,	Kindling wood,	6	20	–	2	Good,	Certificates,	Complied.

DISTRICT No. 10 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	NUMBER EMPLOYED.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
HINSDALE.								
Pomeroy's Woollen Mill,	Woollen goods,	36	21	–	2	Fair,	Certificates, guard openings, guard set screws,	Complied.
Hinsdale Bros, No. 1,	Woollen goods,	88	146	1	24	Fair,	None,	–
Hinsdale Bros, No. 2,	Woollen goods,	66	48	–	7	Fair,	Certificates,	Complied.
Hinsdale Bros., No 1,	Woollen goods,	153	77	11	31	Fair,	Guard belt, time notice,	Complied.
Hinsdale Bros., No. 2,	Woollen goods,	96	55	3	2	Fair,	Time notice,	Complied.
Pomeroy's Woollen Mill,	Woollen goods,	52	10	–	1	Fair,	None,	–
LANESBOROUGH.								
Berkshire Glass Co.,	Window glass,	81	–	–	2	Good,	None,	–
Berkshire Glass Co.,	Window glass,	80	–	–	–	Good,	None,	–
LENOX.								
Centennial Mill,	Wood pulp,	6	–	–	–	Good,	None,	–
Niagara Mill,	Wood pulp,	6	–	–	–	Good,	None,	–
Page, Harding & Co.,	Roof glass,	40	–	–	–	Good,	None,	–
Centennial Mill,	Wood pulp,	6	–	–	–	Good,	None,	–
Niagara Mill,	Wood pulp,	8	–	–	–	Good,	None,	–
GREAT BARRINGTON.								
Berkshire Courier,	Newspaper and printing,	10	2	–	–	Good,	Time notice,	Complied.

Monument Mills, Nos. 1 and 5,	Cotton warp,	58	68	1	13	Good,	Time notice, guard opening near elevator,	Complied.
Owen Paper Co.,	Writing paper,	34	66	1	14	Fair,	Certificate, designate water closet,	Complied.
Monument Mills, Nos. 2 and 4,	Counterpanes,	104	52	1	14	Good,	None,	–
Everett Woollen Co.,	Woollen goods,	40	50	8	3	Good,	Certificates,	Complied.
Monument Mills, Nos. 1 and 5,	Cotton warp,	83	64	–	25	Good,	None,	–
Monument Mills, Nos 2 and 4,	Counterpanes,	83	63	–	14	Good,	Certificates, guard elevator opening,	Complied.
Owen Paper Co.,	Writing paper,	20	77	1	3	Good,	None,	–
Everett Woollen Co.,	Woollen goods,	119	87	4	19	Good,	None,	–
ERVING.								
Washburn & Haywood Chair Co.,	Chairs,	70	–	–	–	Fair,	Guard set screws,	Complied.
Washburn & Eddy,	Sash and doors,	8	–	–	–	Fair,	None,	–
Miller's Falls Manufacturing Co,	Hardware,	169	6	–	8	Good,	Certificates,	Complied.
Greenfield Tool Works,	Table cutlery,	22	3	–	–	Good,	Designate water closets,	Complied.
FLORIDA.								
Glen Pulp and Paper Co.,	Wood pulp,	14	–	–	–	Fair,	Repair safety catch on elevator,	Complied.
GREENFIELD.								
Reece Bros.,	Screw plates,	7	–	1	–	Good,	Time notice,	Complied.
Morey & Son,	Electrotyping,	7	8	–	–	Good,	None,	–
H. D. Watson,	Publishing house,	7	13	–	–	Good,	None,	–
Stratton Bros,	Spirit levels,	7	–	–	–	Good,	None,	–
Emil Weisbrod,	Pocket books,	12	18	–	–	Good,	None,	–
B B Noyes & Co,	Hardware,	20	–	–	–	Good,	Guard fly-wheel,	Complied.
Thomas M. Austin & Co.,	Planing mill,	3	–	–	–	Good,	None,	–
Willey & Russell Mf'g. Co.,	Screw cutting machines and tools,	125	–	–	1	Good,	Certificate,	Complied.
Willey & Russell Mfg. Co.,	Screw pattern shop,	2	–	–	–	Good,	None,	–

DISTRICT No. 10 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	NUMBER EMPLOYED.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
Greenfield — Concluded.								
Warner Manufacturing Co.,	Hardware and cutlery,	50	2	–	–	Fair,	Guard belt in grinding-room, guard set screws, designate water closets,	Complied.
The Rugg Manufacturing Co.,	Rakes and snow shovels,	15	–	–	–	Good,	Guard fly-wheel and set screws,	Complied.
Newton's Sawmill,	Lumber,	5	–	–	–	Good,	Guard belt,	Complied.
Wells Bros & Co.,	Screw cutting machines and tools,	40	–	–	1	Good,	Guard set screws,	Complied.
Green River Mill,	Meal and feed,	2	–	–	–	Good,	None,	–
Charles R. Field,	Children's carriages,	14	–	–	–	Good,	None,	–
Cutler, Lyon & Field,	Shoes,	80	45	–	4	Good,	Certificates and time notice,	Complied.
COLRAIN.								
Canady & Field,	Cotton cloth,	38	20	–	6	Fair,	Designate water closet,	Complied.
Canady & Field,	Cotton cloth,	30	20	–	5	Fair,	None,	–
Canady & Field,	Cotton cloth,	25	25	1	3	Fair,	None,	–
Griswoldville Mfg Co, No 2 Mill,	Cotton goods,	60	35	5	19	Good,	Designate water closets,	Complied.
Griswoldville Mfg. Co, No 1 Mill,	Cotton goods,	85	35	3	17	Good,	None,	–
Griswoldville Mfg. Co, No 2 Mill,	Cotton goods,	67	42	1	17	Good,	None,	–
Griswoldville Mfg. Co, No. 1 Mill,	Cotton goods,	74	42	3	18	Good,	None,	–
Griswoldville Mfg Co, No 2 Mill,	Cotton goods,	58	48	1	18	Good,	None,	–
Griswoldville Mfg. Co., No. 1 Mill,	Cotton goods,	71	36	–	29	Good,	None,	–

DALTON.								
Renfrew Mfg. Co (No. 4),	Cotton yarn,	17	21	–	1	Good,	Certificates, guard set screws,	Complied.
C. J. Kittridge & Co.,	Woollen goods,	63	21	1	5	Good,	Guard belts,	Complied.
Crane & Co.,	Bond paper,	21	19	–	–	Good,	None,	–
Carson & Brown Co.,	Ledger and fine writing paper,	54	71	–	–	Good,	None,	–
C. Glennon & Sons,	Woollen goods,	87	31	2	12	Good,	Certificates,	Complied.
Renfrew Mfg. Co (No. 4),	Cotton yarn,	16	22	–	7	Good,	Time notice,	Complied.
Zenas Crane, Jr., & Bro.,	Fine writing paper,	60	110	–	–	Good,	None,	–
Defiance Mill,	Ledger paper,	35	110	–	–	Good,	Designate water closet,	Complied.
Centennial Mill,	Ledger paper,	36	22	–	9	Good,	Guard belt and set screws, certificates, time notice, designate water closet,	Complied.
C. Glennon & Sons,	Woollen goods,	99	31	2	12	Good,	Designate water closets,	Complied.
C. J. Kittridge & Co.,	Woollen goods,	57	18	–	5	Good,	Certificates,	Complied.
Dalton Shoe Co.,	Shoes,	7	18	–	2	Good,	Certificates, time notice, designate water closets,	Complied.
Renfrew Mfg. Co. (No. 4),	Cotton yarn,	16	22	–	2	Good,	None,	–
C. J. Kittridge & Co.,	Woollen goods,	57	18	–	4	Good,	None,	–
CLARKSBURG.								
Linwood Mills,	Woollen goods,	91	24	–	8	Good,	None,	–
Linwood Mills,	Woollen goods,	70	30	1	12	Good,	None,	–
J. H. Bellows,	Dressed lumber,	3	–	–	–	Good,	None,	–
C. W. Gallup,	Boxes,	9	–	–	–	Good,	None,	–
C. W. Gallup,	Boxes,	11	–	–	–	Good,	Guard gear to sawing machine,	Complied.
F. W. Welsby,	Grist mill,	3	–	–	–	Good,	None,	–
J. H. Bellows,	Planing mill,	3	–	–	–	Good,	None,	–
Linwood Mills,	Woollen goods,	95	25	–	10	Good,	None,	–

DISTRICT No. 10 — *Continued.*

NAME OF FACTORY OR WORKSHOP	Goods Manufactured.	Number Employed.				Sanitary Condition	Orders Given.	Compliances.
		Males.	Females	Under 14.	14 to 16.			
CHESHIRE.								
W. B Dean,	Saw & grist mill,	30	–	–	3	Good,	Certificates, guard belt,	Complied.
Cheshire Shoe Mfg. Co,	Shoes,	95	50	–	12	Good,	Certificates,	Complied.
J. S. Adams.	Cotton warp,	21	18	–	2	Fair,	Certificates, guard set screws,	Complied.
A. S. Farnham & Bro,	Lime,	4	–	–	–	Fair,	None,	–
Cheshire Shoe Mfg. Co,	Shoes,	94	43	2	16	Fair,	None,	–
Berkshire Glass Sand Co., (Gordon mine),	Glass sand,	5	–	–	–	Fair,	None,	–
Berkshire Glass Sand Co, (Burgett mine),	Glass sand,	18	–	–	–	Fair,	None,	–
W. B. Dean,	Barrels,	7	–	–	–	Fair,	None,	–
J. S. Adams,	Cotton warp,	21	18	–	1	Fair,	Designate water closets,	Complied.
W. B. Dean,	Saw & grist mill,	20	–	–	1	Good,	None,	–
W. B. Dean,	Barrels,	7	–	–	–	Good,	None,	–
J. S. Adams,	Cotton warp,	22	17	–	3	Fair,	Time notice,	–
CONWAY.								
Conway Woollen Mills,	Woollen goods,	100	25	3	5	Fair,	Designate water closets, certificates, guard crank arm, guard set screws,	Complied.
Tucker & Cook Mfg. Co., (mill No. 1),	Cotton warp and yarns,	24	13	–	3	Good,	Certificates,	Complied.

Tucker & Cook Mfg. Co., (mill No. 2),	Cotton yarns,	18	11	–	4	Good,	Certificates,	Complied.
Tucker & Cook Mfg. Co, (mill No. 1),	Cotton warp and yarns,	24	16	–	8	Good,	None,	–
Tucker & Cook Mfg. Co, (mill No. 2),	Cotton warp,	18	11	–	5	Good,	None,	–
Conway Woollen Mills,	Woollen goods,	65	28	1	5	Fair,	None,	–
						Good,	None,	–
Tucker & Cook Mfg. Co., (No. 1 mill),	Cotton warp and yarns,	20	20	–	12			
Tucker & Cook Mfg. Co., (No. 2 mill),	Cotton yarns,	18	11	–	3	Good,	None,	–
Conway Woollen Mills,	Woollen goods,	62	27	1	6	Fair,	Guard main belt in machine shop, time notice,	Complied.
Conway Creamery,	Butter,	9	–	–	–	Good,	None,	–
CHARLEMONT.								
A. L. Cooley,	Chair stock,	8	–	–	–	Good,	Guard set-screws,	Complied.
Preston Baker,	Grist mill,	2	–	–	–	Good,	None,	–
W. H. Foster,	Stair fixtures,	3	–	–	–	Good,	None,	–
H. A. Rice,	Grist mill,	3	–	–	–	Good,	None,	–
R. R. Edwards,	Scythe snaths,	5	–	–	–	Good,	None,	–
BECKET.								
Becket Silk Co.,	Silk threads and braids,	4	9	–	2	Good,	Certificate, designate water closet,	Complied.
Becket Silk Co.,	Silk threads and braids,	14	11	–	2	Good,	None,	–
BERNARDSTON.								
Crystal Cutlery Co.,	Butchers' cutlery,	12	–	–	–	Fair,	Guard set screws,	Complied.

DISTRICT No. 10 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
Bernardston — Concluded.								
H. Hale,	Grist & saw mill,	7	–	–	–	Good,	Guard slab-saw belt,	–
C. A. Cook,	Carriage shop,	2	–	–	–	Good,	Guard main belt,	Complied.
BUCKLAND.								
J. A. Richmond,	Sashes, doors and blinds,	5	–	–	–	Good,	None,	–
Lamson Goodnow Mfg. Co,	Cutlery,	222	13	3	12	Good,	None,	–
H. A. Bowen,	Paper boxes,	1	6	–	1	Good,	Certificates, time notice,	Complied.
Lamson Goodnow Mfg. Co.,	Cutlery,	210	15	4	20	Good,	Certificates,	Complied.
J. A. Richmond,	Sashes, doors and blinds,	5	–	–	–	Good,	Guard band saw,	Complied.
ADAMS.								
Renfrew Mfg. Co,	Ginghams,	225	225	1	13	Good,	None,	–
H. J. Arnold & Son,	Lumber and saw mill,	12	–	–	–	Good,	Guard belt,	Complied.
Cook & Arnold,	Coal, wood and kindlings,	7	–	–	1	Good,	Certificate and time notice,	Complied.
W. C Richmond,	Grist mill,	7	–	–	–	Good,	None,	–
Allen Iron Works,	Machinery,	15	–	–	–	Good,	Guard circular-saw belt,	Complied.
Renfrew Mfg Co., No. 6,	Cotton warp,	53	57	–	18	Good,	Certificates,	Complied.
Adams Bros & Co,	Cotton warp,	35	33	1	3	Fair,	Guard belt, designate water closets, certificates,	Complied.

B. F. Phillip & Son,	Woollen goods,	82	43	3	8	Fair,	None,	–
W. C. Plunkett & Sons, No 3,	Cotton warp,	57	43	1	10	Good,	Certificates,	Complied.
L. L Brown Paper Co., Stone Mill,	Ledger paper,	5	40	–	3	Fair,	Guard pulley, better water closets, keep elevator gates closed,	Complied.
L. L. Brown Paper Co., Lower Mill,	Ledger paper,	30	55	3	6	Good,	Designate water closets, keep elevator gates closed,	Complied.
W. C. Plunkett & Sons, Lower Mill,	Spinning cotton,	14	14	–	5	Good,	None,	–
Renfrew Mfg. Co., No. 1,	Cotton warp,	57	33	1	9	Good,	Certificates, repair elevator gates,	Complied.
Renfrew Mfg. Co., No. 2,	Ginghams & table-cloths,	451	314	4	51	Good,	Certificates,	Complied.
Greylock Mills, No. 2,	Ginghams,	54	26	1	5	Good,	Designate water closet, guard belt,	Complied.
American Zylonite Co.,	Zylonite,	118	2	–	3	Good,	Guard fly-wheel,	Complied.
United Zylonite Co,	Zylonite novelties,	291	127	1	43	Good,	None,	–
B. F. Phillip & Son,	Woollen goods,	95	30	–	9	Fair,	None,	–
Adams Bros & Co,	Cotton warp,	34	31	–	9	Fair,	Guard set screw,	Complied.
Allen Iron Works,	Machinery,	12	–	–	–	Good,	None,	–
Renfrew Mfg Co, No. 3,	Dye works,	37	1	–	4	Good,	Time notice, repair safety device,	Complied.
United Zylonite Co,	Zylonite novelties,	308	135	5	40	Good,	None,	–
Renfrew Mfg. Co, No. 2,	Ginghams,	440	300	12	53	Good,	Repair elevator gate,	Complied.
Greylock Mills, No. 2,	Ginghams,	34	26	–	9	Good,	None,	–
B. F. Phillip & Son,	Woollen goods,	81	36	1	16	Fair,	None,	–

DISTRICT No. 11, ... F. W. MERRIAM, *Inspector*.

CHESHIRE.								
Cheshire Shoe Mfg. Co,	Shoes,	59	41	–	4	Fair,	Certificates, time notices, designate water closets, guard shafting, and elevator openings,	Complied.

DISTRICT No. 11 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	NUMBER EMPLOYED.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
Cheshire — Concluded.								
W. B. Dean,	Woodwork,	30	–	–	1	Fair,	Certificate,	Complied.
Berkshire Glass Sand Co.,	Fire brick,	4	–	–	–	Good,	None,	–
CLARKSBURG.								
Linwood Mill,	Woollens,	108	27	–	8	Fair,	None,	–
Red Mill,	Woodwork,	5	–	–	–	Fair,	None,	–
COLRAIN.								
Shattuckville Mill,	Light cottons,	29	20	–	–	Good,	Fire escape,	Complied.
CONWAY.								
Conway Woollen Mill,	Woollens,	55	26	–	–	Fair,	Protect against steam pipes,	Complied.
DALTON.								
Dalton Shoe Co.,	Fine shoes,	20	16	–	–	Good,	Fire escape,	Complied.
DEERFIELD.								
Wiley & Russell Mfg. Co.,	Machinists' tools,	119	–	–	11	Good,	Certificates,	Complied.
C. Wing,	Pattern making,	2	–	–	–	Good,	None,	–
Arms Manufacturing Co.,	Wallets,	11	29	–	2	Fair,	Certificates, designate privies, guard stairway openings,	Complied.

Erving.								
Greenfield Tool Works,	Cutlery,	28	4	1	1	Good,	Safety device, designate privies,	Complied.
Miller's Falls Mfg. Co.,	Hardware,	173	7	1	6	Good,	Guard shafting,	Complied.
W. J. Phelps,	Hosiery,	1	10			Good,	Additional privy,	Complied.
Washburn & Eddy,	Sashes, doors, etc.,	8	–			Good,	None,	–
Washburn & Heyward,	Chairs and pails,	70	–		2	Good,	Certificates, guard shafting,	Complied.
C. E. Stone,	Piano cases,	30	–			Good,	None,	–
Greenfield.								
Emil Welsbrod,	Wallets,	9	16			Good,	Designate water closets,	Complied.
Thos. Austin,	Woodwork,	3	1			Fair,	None,	–
Wells Brothers & Co.,	Machinists' tools,	39	–		1	Good,	Certificate,	Complied.
Chas. R. Field,	Child's carriages,	15	–			Good,	None,	–
B. B. Noyes,	Hardware,	20	–		1	Good,	Guard main belt, certificate, time notice,	Complied.
Greenfield Steam Laundry,	Laundry work,	2	1			Fair,	None,	–
Stratton Brothers,	Spirit levels,	7	–			Good,	None,	–
Reece Brothers,	Machinists' tools,	7	–		1	Good,	None,	–
Watson Publishing Co.,	Publishers,	13	13			Fair,	Time notices,	Complied.
F. Morey & Sons,	Electrotyping,	10	10			Fair,	Time notices,	Complied.
Chas. N. Wood,	Paper boxes,	–	3			Good,	None,	–
Lanesborough.								
Berkshire Glass Co.,	Window glass,	89	–		3	Fair,	Certificates,	Complied.
Montague.								
Geo. F. Littlefield Shoe Co.,	Fine shoes,	59	10			Fair,	Fire escape,	Complied.
North Adams.								
E. R. Hayden,	Paper boxes,	2	8		2	Fair,	Certificates,	Complied.
D. W. Rising,	Paper boxes,	2	18			Fair,	Additional water closet,	Complied.

DISTRICT No. 11 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
North Adams — Concluded.								
Whitman, Canedy & Co.,	Shoes,	89	61	2	13	Good,	Certificates,	Complied.
E. J. Carey,	Paper stock,	5	30	–	3	Fair,	Certificates,	Complied.
Johnson Manufacturing Co,	Ginghams,	106	189	3	42	Good,	Certificates,	Complied.
Fitchburg Railroad Repair Shop,	Repairing,	14	–	–	–	Good,	None,	–
J. M Barber,	Woodwork,	9	–	–	–	Fair,	None,	–
Phœnix Mill,	Flouring,	6	–	–	–	Good,	None,	–
Hamer Washing Machine Works,	Washing machines,	4	–	–	–	Good,	None,	–
Levi W Boyd,	Woodwork,	2	–	–	–	Good,	None,	–
W. G. Cady & Co.,	Shoes,	161	100	2	17	Fair,	None,	–
N. L. Millard,	Shoes,	109	76	1	16	Poor,	Time notices, better sanitary condition,	Complied.
D G. Barber,	Tanning,	30	10	1	–	Fair,	Certificates, guard belts and shafting,	Complied.
E. A. Rand & Son,	Flour, feed, etc.,	7	1	–	–	Good,	None,	–
H. T. Cady,	Shoes,	100	50	7	13	Fair,	Certificates,	Complied.
Eclipse Mill,	Print cloth,	29	121	1	20	Good,	None,	–
Beaver Mill,	Print cloth,	56	84	1	16	Good,	Certificates,	Complied.
Eagle Mill,	Print cloth,	30	65	–	12	Good,	None,	–
Estes Mill,	Print cloth,	8	25	2	8	Good,	Guard shafting,	Complied.
Stone Mill,	Print cloth,	5	17	–	–	Fair,	Guard shafting,	Complied.
Bartlett Brothers,	Woodwork,	36	–	–	–	Good,	Guard shafting,	Complied.
C. T. Sampson Mfg. Co,	Shoes,	248	125	1	27	Good,	Certificates, time notices, guard shafting and belt, repair elevator gates,	Complied.

Arnold Print Works,	Prints,	621	49	3	42	Good,	Designate water closets,	Complied.
S. B. Dibble,	Woodwork,	18	–	–	–	Good,	Guard shafting,	Complied.
Freeman Print Works,	Prints,	292	50	1	80	Good,	Guard belt, designate water closet,	Complied.
Henry's Laundry,	Laundry work,	5	4	–	–	Good,	Guard fly-wheel, belts and shafting,	Complied.
Blackinton Woollen Co.,	Woollens,	231	116	9	23	Good,	None,	–
Johnson Manufacturing Co.,	Ginghams,	95	183	–	–	Good,	Protect against steam pipes, additional fire pails,	Complied
Eclipse Mill,	Print cloth,	57	87	–	–	Fair,	None,	–
ORANGE.								
Geo. H Lawrence,	Woodwork,	6	–	–	–	Good,	Guard shafting,	Complied.
Geo. W Bingham,	Button holes,	1	8	–	–	Good,	None,	–
Jay B. Reynolds,	Shoes,	122	52	–	–	Fair,	None,	–
PITTSFIELD.								
Wm Clark & Co,	Machinery,	40	–	–	–	Fair,	Guard shafting and belt,	Complied.
E. D. Jones,	Pattern making,	17	–	–	–	Good,	None,	–
Sprague Brimmer Mfg. Co.,	Shirts,	15	120	–	–	Good,	Guard shafting and belt, repair elevator and gate, designate water closets,	Complied.
J B. Haskins,	Paper boxes,	3	14	–	–	Fair,	Designate water closets,	Complied.
Pittsfield Box Shop,	Paper boxes,	3	15	–	–	Fair,	None,	–
Pittsfield Carriage Co.,	Carriages,	7	–	–	–	Good,	None,	–
Z. A. Ward,	Furniture, etc.,	10	–	–	–	Good,	Guard fly-wheel and belt,	Complied.
Owen Coogan & Sons,	Tanning,	25	–	–	–	Fair,	Guard elevator and stairway openings,	Complied.
W. C. Stevenson Mfg. Co.,	Spools, bobbins, etc.,	34	–	–	2	Fair,	Certificates, time notices,	Complied.
Russell & Brown,	Woollen yarn,	8	–	–	–	Fair,	Guard shafting,	Complied.
May & Chapel,	Machinery,	12	–	–	–	Good,	None,	–
T. R. Glentz,	Woodwork,	40	–	–	–	Good,	None,	–

DISTRICT NO. 11 — *Concluded.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
Pittsfield — Concluded.								
A. H. Rice & Co.,	Silks, braids, etc.,	11	47	–	20	Good,	Certificates, guard shafting and stairway openings,	Complied.
F. A. Robbins,	Envelopes,	1	6	–	–	Good,	Time notices,	Complied.
D. M. Collins & Co.,	Paper boxes,	5	7	–	1	Fair,	Certificate, time notices,	Complied.
C. E. Merrill,	Woodwork,	60	–	–	–	Fair,	Guard fly-wheels, cranks and belts,	Complied.
Robbins, Kellogg & Co.,	Shoes,	111	73	–	–	Fair,	Fire escape on annex,	In process.
Van Sickler Mill,	Woodwork and woollens,	57	28	–	–	Fair,	Fire escape,	Complied.
Pittsfield Steam Power Co.,	Shoes and woollen yarn,	48	6	–	–	Fair,	None,	–
WENDELL.								
Farley Paper Co.,	Papers,	15	–	–	–	Fair,	Repair elevator safety device,	Complied.
Stoddard Wood Paper Co.,	Wood pulp,	6	–	–	–	Fair,	Guard shafting & stairway opening,	Complied.
WILLIAMSTOWN.								
Williamstown Mfg. Co.	Print cloth,	87	108	–	–	Good,	Two fire escapes,	Complied.

REPORT OF THE DETECTIVE DEPARTMENT.

It has been a comparatively uneventful year, as respects public disorder arising from strikes and similar causes, but it has been no less a period of constant activity in the two departments which constitute the District Police.

In the detective department arduous and valuable services have been rendered by faithful and experienced officers, some of whom have been engaged in such work for many years. The qualities of sleepless vigilance, discretion, energy, knowledge of men and of affairs, and strict integrity, are indispensable to those who would succeed in the detection and punishment of crime.

It gives me pleasure to report that the officers detailed for these duties have given satisfaction, and are justly entitled to the confidence which has so long been extended to them. Under the recent provisions of law, creating the two departments of the District Police, each has every inducement to concentrate his attention and efforts, and to distinguish himself by trained and effective service.

The best tribute that can be paid to the prudence and good sense of an officer is the testimony of those with whom he is brought into official contact in the administration of the laws. If his zeal outruns his discretion, if he is negligent in securing evidence and blundering in the preparing of his cases, none will be so quick to detect his faults as the keen, experienced, able district attorneys, who must, to some extent, rely upon him in the several ways indicated; and those honorable officials have generously recognized the faithful and intelligent work of our officers.

I have had occasion heretofore to state that an excellent quality in an officer is the ability to do his work quietly, and to avoid unnecessary friction with others having like results in view. Experience soon teaches the wisdom of such a course, and a few mortifying failures will deepen the impression it makes.

It gives me pleasure to submit the following copies of letters received from the district attorneys: —

LYNN, MASS., Oct. 8, 1889.

RUFUS R. WADE, Esq., *Chief Massachusetts District Police.*

DEAR SIR: — In reply to your favor desiring my opinion as to the efficiency of the officers of the District Police assigned to this district during my administration, I desire to say that I have had occasion to test in the most thorough manner the efficiency and skill of the two officers assigned to this district. Both of them are men of honesty and are incorruptible; and the abilities that they have displayed in the performance of their duties and in investigating important cases show them to be well fitted for the positions they hold. I do not think it would be possible to find two men to fill the positions that these officers fill. As you well know, I refer to Moulton Batchelder of Lawrence and Joseph E. Shaw of Lynn.

Very truly yours,

HENRY F. HURLBURT,

District Attorney.

BOSTON, Nov. 9, 1889.

RUFUS R. WADE, Esq., *Chief of District Police.*

DEAR SIR: — It gives me great pleasure to express to you my appreciation of the officers in your department with whom I have been officially associated during the past ten years. They have been an able, experienced and efficient body of men, on whom I could always depend. I have relied upon them not so much to secure evidence for the purpose of convicting criminals, as to investigate cases and ascertain the real facts. Their services in this respect have been invaluable. Absolutely honest, faithful, and indefatigable in their labors, they have been of great assistance to the just administration of criminal law. I only speak of them as I have been brought in contact with them. Doubtless in other fields of labor their services have been equally valuable. I am certain they are entitled to the confidence, gratitude and support of the Commonwealth.

Yours very truly,

W. B. STEVENS,

District Attorney for the Northern District.

WORCESTER, MASS., Sept. 27, 1889.

Mr. RUFUS R. WADE, *Chief Massachusetts District Police.*

Yours of 26th just at hand, in which you ask my opinion of the efficiency of the officers of District Police assigned to my district

during my administration. Mr. Hayter and Mr. Emory have been the only officers with whom I have been in communication, of those assigned to this district. They are the only ones assigned for criminal business. Mr. Hayter has been here during the past three years, and I have found him an exceedingly efficient officer. I could not ask for a better officer. He is gentlemanly, courteous, and one in whom I put the most absolute reliance; absolutely incorruptible, sagacious,. untiring; shrewd in a proper sense, at the same time entirely fair to defendants; as a witness, clear, straightforward, carrying conviction. Juries never question the truth of anything he testifies to. Mr. Emory has been in this district only a few months. From my somewhat meagre knowledge of him, I cannot speak with that fulness that I have as to Mr. Hayter; but, from what I have seen of him, he impresses me as one exceedingly desirous of doing the best in his power, and when in doubt often consults me. I have no reason to doubt or question his efficiency.

Respectfully yours,

F. A. Gaskill,

District Attorney.

New Bedford, Mass., Oct., 31, 1889.

Rufus R. Wade, *Chief of District Police.*

Dear Sir: — In reply to your favor of October 29, asking my opinion as to the efficiency of the officers of the District Police assigned to my district, I have to say as follows: practically but one officer, Mr. George F. Seaver, has been at my disposal in criminal business for a number of years. He is a faithful and efficient officer, whose services have always been ready, and who has very much assisted me in the administration of the duties of my office. Mr. Dexter, the other officer assigned to this district, was also a very good officer indeed, and I much regret that it has been found necessary to assign him to inspection work. I think the system of District Police is a good one, particularly in districts like mine, where there are many towns without an organized system of police; and that there should be at least two officers who are ready to give their attention to criminal work.

Yours respectfully,

Hosea M. Knowlton.

Boston, Nov. 9, 1889.

Rufus R. Wade, Esq., *Chief of the District Police.*

My Dear Sir: — During my term of service as district attorney for the South-eastern District, I was constantly brought in contact

with the officers of the State force, and had occasion to employ them in many important cases. I always found them prompt, efficient, and thorough in their work, and I am strongly of the opinion that the Commonwealth cannot afford to dispense with the services of such a force.

Very truly yours,

ASA FRENCH.

I am happy to concur in the foregoing; and, while I was district attorney, I received great help from the force.

E. C. BUMPUS.

BRIDGEWATER, Sept. 30, 1889.

RUFUS R. WADE, *Chief of District Police.*

MY DEAR SIR: — In answer to your inquiry, I reply that during my term of office as district attorney for the South-eastern District I always found every District Police officer I had occasion to use ready, willing and efficient; their cases well worked up, and prepared for trial.

Yours truly,

HOSEA KINGMAN.

NORTHAMPTON, MASS.

RUFUS R. WADE, Esq., *Chief of District Police, Boston, Mass.*

DEAR SIR: — I have found the officers of the District Police force, assigned to my district during the twelve years I have been district attorney, very capable and useful. It would be impossible to properly enforce the criminal law without these officers, or others occupying the same position as they do, with reference to to the investigation and detection of crime.

Yours truly,

D. W. BOND.

PITTSFIELD, MASS., NOV. 23, 1889.

RUFUS R. WADE, Esq.

MY DEAR SIR: — In reply to yours asking my opinion as to the efficiency of the officers of the District Police, would say that I have no knowledge of the efficiency of any except M. H. Pease of Lee. Of Mr. Pease I do not hesitate to speak in the highest terms. He is active, reliable and efficient, and always ready and willing to discharge any service required of him in the line of his duty.

Yours truly,

CHAS. E. HIBBARD.

Officer M. H. Pease is assigned to the Western District.

Special Duties.

Officers of the force have been called upon for special duty at Taunton, South Framingham, Lake Walden, Plymouth, Highland Lake, Worcester, Sandwich, Marshfield, Blandford, Lancaster, Bridgewater, Sterling, Cummington, Saugus, Weymouth, Greenfield, Bolton and Lynn.

Violation of the Fish Laws.

Acting under the direction of your predecessor, the officers of the force were instructed to take the most active measures to prevent illegal fishing in the waters of Buzzard's Bay. As the result of their efforts the following-named vessels were seized: "A. T. Serrell," "Seconnett," and "Church." The officers and crew of the above-named vessels, to the number of forty-three, were arrested while in the act of violating the law, and were brought before Trial Justice S. K. Hopkins, Esq., of Barnstable, and fined $100 and costs each. An appeal was taken, and the cases carried to the higher courts.

Arrests.

Arrests have been made to the number of 578.

Among the most important cases investigated are the following: —

Joseph Millbury. Breaking and entering. Sentenced to the Massachusetts Reformatory.

Jas. Welch. Burglar. Six years State Prison.

George Hall, *alias* Sylvester. Breaking and entering. Two years House of Correction.

Patrick Reardon. Notorious thief. Reformatory.

John Cartlidge. Horse thief. Three years State Prison.

Harry L. Austin. Burglar. Reformatory.

Robert Laycock. Incest. Found guilty; sentenced to four years in the State Prison.

D. M. Gilmore. Two cases breaking and entering. Sentenced to Massachusetts Reformatory.

Geo. W. Goodrich. Breaking and entering. Sentenced to Massachusetts Reformatory.

Albert J. Pettingill. Breaking and entering. Sentenced to Massachusetts Reformatory.

THOMAS MAYNOR. Manslaughter. Sentenced to House of Correction.

WM. H. MCINTYRE. Forgery. Sentenced to Massachusetts Reformatory.

ORIN F. BEAL. "White Cap" letter. Indicted; awaiting trial.

HENRY JOHNSON, HARRY E. JOHNSON. Stealing a flock of fifty sheep. Awaiting sentence.

ELDORUS E. SNOW. Rape. Sentenced seven years State Prison.

JOSEPH A. BAYERS. Perjury. Defaulted bail in lower court.

HARVEY E. BLAKE. Horse thief. Turned over to Connecticut officers; sent to State Prison.

WM. CLARK, WM. CONNELLY, JOSEPH SMITH. Felonious assault. Awaiting trial.

GEORGE W. WAGNER. Rape. Bound over to superior court; committed suicide in jail.

WM. F. BOWEN. Larceny from building. Turned over to Connecticut officers; sentenced to four years in State Prison.

JOHN LEONARD. Burglar and safe blower. Turned over to Connecticut officers; sentenced to four years in State Prison.

GEORGE FILLEO, HERMAN WYCKLES. Larceny from building. Sent to Reform School during minority.

EDWIN C. BEEBE. Larceny from building. Awaiting trial.

ANSEL W. GARFIELD. Burglary. Six months House of Correction.

JOHN W. B. FOSTER. Burglary. Four years in State Prison.

CHARLES B. GAFFNEY, RICHARD MCNOTT. Burglary. Sentenced to Massachusetts Reformatory.

JOHN J. HAGGERTY. Arson. Sentenced to Massachusetts Reformatory.

EDSON H. NORTON. False pretences. Sentenced one year in House of Correction.

SAMUEL CHAMBERLIN VINING. Horse stealing. Three years State Prison.

CHARLES D. CURRIER. Burglary. Three years House of Correction.

DAVID SHUTTLE. Burglary. Three years House of Correction.

CHARLES LYNES. Common thief and burglary. Eight years State Prison.

RAYMOND BURION. Horse stealing. Two and one-half years House of Correction.

RICHARD SCHENCK. Horse stealing. Two and one-half years House of Correction.

FRANCIS F. ROSE. Larceny. Sent to Concord Reformatory.

FRANK BLAIR. Breaking and entering. Two years House of Correction.

HARRY LEONARD, *alias* BELL, NEVINS, CONNERS, etc. Three indictments. Ten years State Prison.

FRANK E. MILLER. Assault with intent to rape. Seven years State Prison.

LEANDER C. LEROY. Breaking and entering, also larceny. Sent to Massachusetts Reformatory.

CHARLES G. RANDALL. Breaking and entering, also larceny. Sent to Massachusetts Reformatory.

PETER ROBERTS, Jr. Robbing from the person, and horse stealing. Three years House of Correction.

CHRISTOPHER CARTER. Horse thief. Four years State Prison.

EVAN T. REED. Breaking and entering, also larceny. Sent to Massachusetts Reformatory.

HARVEY T. STANLEY. Selling mortgaged and leased property. Sent to House of Correction.

JOSEPH P. WELCH. Bail bond. Three years State Prison.

HANNAH W. ROBERTS. Abortion. Four years in Women's Prison.

JOHN C. LOWREY, *alias* RUSSELL, LAWLER and DAYMON. Massachusetts Reformatory.

EDGAR L. WILLIAMS. Embezzlement. Turned over to Boston officers.

EDWARD P. GRANT. Breaking and entering. One year House of Correction.

S. LEE. Burglary. Three years in House of Correction.

HENRY P. TOBEY. Larceny from building. Sent to Massachusetts Reformatory.

GEORGE E. ROBINSON, GEORGE E. PARKHURST, CHARLES A. KNIGHT. Burglary. Found guilty; awaiting sentence.

ALBERT NIGHTINGALE. Selling leased property. Ten months House of Correction.

JOHN W. JEWETT. Arson. Awaiting trial.

TIMOTHY J. CALLAHAN. Fraudulent insurance. Awaiting trial.

WM. ANDERSON. Larceny in building. Three years State Prison.

THOMAS GAY. Breaking and entering. Five years and five months State Prison.

CHARLES PUTNAM. Indicted on a charge of abortion. Awaiting trial.

HERBERT W. GOULD. Aiding in abortion. Awaiting trial.

GEORGE W. PARSONS. Larceny in building. One year three months House of Correction.

GEORGE KENDALL. Breaking and entering. Three years and six months House of Correction.

ALBERT KEHO. Breaking and entering. Five years State Prison.

EDWARD H. NORTON. Forgery. Awaiting trial.

JAMES WELCH. Breaking and entering, three counts. Three years State Prison.

JAMES DONOVAN. Breaking and entering. Probation.

JOHN BARNES. Breaking and entering. Turned over to Providence officers.

MORRIS BLACK. Larceny. Two and one-half years House of Correction.

HERBERT FIELDS. Breaking and entering, three counts. Massachusetts Reformatory.

CHARLES PHELPS. Breaking and entering, three counts. Massachusetts Reformatory.

WALBRY J. DAVID. Breaking and entering. Massachusetts Reformatory.

WILLIAM G. KIRKLAND. Adultery. Awaiting trial.

WILLIAM FURGERSON. Breaking and entering. Sent before the grand jury.

PATRICK J. SMITH. Adultery. Twelve months House of Correction.

ALBERTINE M. COMMISKY. Adultery. Fourteen months House of Correction.

GEORGE E. ESSEX. Larceny of horse, harness and carriage. Five and one-half years State Prison.

EUGENE SULLIVAN. Larceny of horse, harness and carriage. Three years State Prison.

THOMAS MOORE. Breaking and entering, two counts. Seven years State Prison.

ROBERT CONDON. Breaking and entering, two counts. Awaiting sentence.

WM. E. MAGUIRE. Murder. Awaiting trial.

ROBERT SWEET, —— COLLINS, DAVID CARROLL. Breaking and entering. Placed on probation.

RICHARD FARRELL. Breaking and entering. Held for grand jury.

GEORGE MACK. Breaking and entering. Held for grand jury.

THOMAS and FRANK BLACK. Conspiracy to defraud the sum of $3,200. Paid the sum of $4,200, including costs. Awaiting sentence.

JOHN and BARNEY CASE. Arson. Sent to House of Correction.

FRANK NELSON. Embezzlement. Sent to House of Correction.

HODGES DRAYTON, *alias* JOHN SIMPSON. Larceny of team. Sent to House of Correction.

CALVIN MILLER. Conspiracy to defraud. Awaiting sentence. Property recovered to the amount of $4,578.21.

CONSOLIDATED STATISTICAL REPORT.

Adultery,	18	Keeping house of ill-fame,	1
Aiding in procuring abortion,	1	Larceny,	80
Abortion,	3	Larceny from building,	16
Arson,	13	Lewd and lascivious,	3
Assault,	2	Murder,	2
Assault and battery,	23	Manslaughter,	1
Assault on officer,	1	Malicious mischief,	3
Assault with intent to rob,	2	Mutual assault,	2
Assault with dangerous weapon,	2	Non-support of family,	8
Attempt at rape,	1	Neglect to register as a pharmacist,	1
Burglary,	12	Obstructing an officer,	5
Breaking and entering,	36	Obtaining money or goods by false pretence,	13
Bail bond,	2	Present at dog fight,	12
Bastardy,	1	Polygamy,	1
Burial of body without permit,	1	Prize fighting,	3
Criminal negligence,	1	Pool selling,	3
Capias,	3	Peddling without license,	1
Criminal libel,	1	Receiving stolen goods,	5
Cruelty to animals,	21	Rape,	4
Common nuisance,	2	Selling mortgaged property,	1
Defrauding hotel-keeper,	9	Selling lottery ticket,	5
Disturbing the peace,	25	Selling poison without registering,	1
Embezzlement,	13	Stubborn child,	3
Felonious assault,	2	Selling oleomargarine,	1
Forgery,	8	Suspicious person,	1
Fornication,	5	Sending threatening letter,	1
Fighting dogs,	4	Transfer of prisoner,	25
Gaming,	5	Vagrancy,	10
Highway robbery,	1	Violation of ticket-of-leave,	3
Horse stealing,	7	Violation of liquor law,	25
Held as a witness,	2	Violation of insurance law,	6
Insane,	3	Violation of fishery law,	92
Incest,	1	Violation of the Lord's Day,	4
Idle and disorderly,	2		
Indecent exposure of person,	1		
Illegal use of team,	1		
Illegal bathing,	1		578

The Disposition of Forfeited Liquors.

It is made my duty, by chapter 100, section 38 of the Public Statutes, to receive from the respective trial justices and courts of the Commonwealth all liquors forfeited by order of said justices and courts, sell the same, and pay over the net proceeds to the State treasurer. Implements of sale and furniture used in the sale of such liquors are included in such disposition. This legislation has proved to be effective to a considerable degree in suppressing the illegal sale of intoxicating liquor. I annex a schedule showing the cities and towns from which the liquor has been received, and the quantity that has been turned over to me up to present date.

Forfeited Liquors from Dec. 1, 1888, to Dec. 1, 1889.

City or Town.	Number of Seizures.	Spirituous.				Malt.			
		Gallons.	Quarts.	Pints.	Gills.	Gallons	Quarts.	Pints.	Gills.
Andover,	8	12	3	–	2	145	2	–	–
Ayer,	10	14	1	1	2	162	–	–	2
Ashland,	7	–	1	1	1	106	–	1	–
Attleborough,	4	3	–	–	2	3	–	–	–
Arlington,	1	–	–	–	–	2	–	–	–
Amesbury,	10	18	–	2	1	20	–	–	–
Abington,	2	13	1	–	–	–	1	–	–
Boston,	716	561	2	1	2½	6,672	1	–	2
Brockton,	64	141	–	1	–	1,562	3	1	2
Blackstone,	18	33	–	–	–	961	–	–	–
Beverly,	6	1	2	–	2	6	3	–	–
Brookline,	20	4	1	–	2	340	–	1	–
Berlin,	4	24	–	1	2	26	2	–	–
Braintree,	1	1	–	–	–	–	3	–	1
Barnstable,	1	–	–	–	–	4	–	–	–
Bridgewater,	3	6	–	–	2	27	2	–	–
Boxford,	1	–	–	–	–	25	–	–	–
Brookfield,	7	21	3	1	–	30	–	–	–
Clinton,	5	4	3	1	2	42	–	–	–
Cambridge,	32	68	2	–	1½	189	1	–	–
Chelsea,	56	50	–	–	3	347	2	1	2
Cottage City,	1	–	–	–	–	1	–	–	2
Charlemont,	1	–	–	–	2	10	–	–	–
Canton,	6	5	3	1	2	28	2	–	–
Concord,	1	–	–	–	–	1	2	–	–
Dedham,	3	3	–	–	1	2	1	–	–
Danvers,	1	–	–	–	–	75	–	–	–
Douglas,	2	4	1	–	–	2	–	–	–
Deerfield,	1	–	–	–	–	40	–	–	–

Forfeited Liquors, Etc. — Continued.

CITY OR TOWN.	Number of Seizures.	Spirituous.				Malt.			
		Gallons.	Quarts.	Pints.	Gills.	Gallons.	Quarts.	Pints.	Gills.
Easthampton,	1	–	–	1	3	5	–	–	–
Easton,	6	–	[illegible]	–	–	12	1	–	–
Framingham,	21	12	1	–	1½	101	2	1	2
Fall River,	47	20	2	–	1	297	[illegible]	1	2
Fitchburg,	13	15	2	1	2	[illegible]	1	1	1
Franklin,	1	–	1	–	–	–	–	–	–
Greenfield,	1	–	–	1	–	–	–	–	–
Grafton,	2	–	–	3	–	2	–	–	–
Gardner,	1	–	–	–	2½	–	–	–	–
Gloucester,	32	4	2	1	1½	47	–	1	–
Great Barrington,	1	–	–	–	3	–	–	–	–
Haverhill,	53	109	2	–	2½	248	–	–	–
Holyoke,	26	115	1	–	–	581	1	1	–
Hyde Park,	4	3	3	–	–	16	1	–	–
Hudson,	2	–	–	–	–	13	2	–	–
Hopkinton,	2	44	3	1	–	18	1	–	1
Harwich,	2	–	3	1	1	–	–	–	2
Ipswich,	2	1	–	–	–	20	–	–	–
Lawrence,	136	170	3	1	3½	4,496	2	1	–
Lowell,	54	65	2	–	3	1,320	1	–	–
Lynn,	56	75	1	1	–	317	3	–	–
Lancaster,	5	39	3	–	2	8	–	–	–
Lexington,	1	8	2	–	–	6	2	1	–
Lynnfield,	3	1	2	1	–	–	2	–	–
Marblehead,	7	16	2	1	–	7	1	–	2
Mendon,	1	3	2	–	–	–	–	–	–
Medford,	12	4	1	–	½	64	3	1	3
Milford,	22	74	1	–	2	213	–	1	1
Marlborough,	1	–	3	–	–	11	–	–	–
Melrose,	3	5	–	–	2	–	–	–	½
Middleborough,	1	–	–	–	2	130	–	–	–
Montague,	1	93	–	–	–	–	–	–	–
Methuen,	2	5	3	–	¾	22	–	–	–
Medway,	2	2	–	–	–	–	–	–	–
Marshfield,	3	5	2	–	–	110	–	–	–
Millis,	1	–	–	–	2	–	–	–	–
Malden,	36	30	2	–	1	451	1	1	–
New Bedford,	16	3	3	–	3½	93	3	–	2
Newburyport,	8	1	2	1	2	1	3	1	2
Newton,	34	18	2	1	2	150	2	1	2
Northampton,	1	–	2	–	–	13	–	–	–
Norwood,	2	1	–	–	–	80	3	–	–
Needham,	3	–	–	–	–	3	1	1	–
Northbridge,	3	–	2	–	–	183	–	–	–
Northborough,	2	11	3	1	–	41	[illegible]	–	–
Natick,	15	[illegible]	3	–	–	19	–	–	2
North Attleborough,	14	24	3	1	2	119	1	1	–
North Adams,	13	41	1	1	–	51	–	1	–
North Brookfield,	11	11	–	1	–	162	2	–	–
Peabody,	13	8	3	–	2	38	1	–	–
Pittsfield,	9	2	2	1	–	98	2	–	–

Forfeited Liquors, Etc. — Concluded.

CITY OR TOWN.	Number of Seizures	Spirituous.				Malt.			
		Gallons.	Quarts.	Pints.	Gills.	Gallons.	Quarts.	Pints.	Gills.
Plymouth,	4	3	1	–	–	35	2	–	–
Pepperell,	5	1	–	–	–	–	–	–	–
Provincetown,	4	7	3	–	–	15	2	–	–
Rehoboth,	1	1	3	–	–	–	–	–	–
Randolph,	1	–	–	–	–	21	–	–	–
Rockland,	3	–	–	1	3	20	–	–	–
Rockport,	1	–	–	–	–	31	–	–	–
Revere,	20	6	3	1	1	90	2	1	2
Spencer,	10	64	1	–	2	12	2	1	–
Salem,	17	11	1	1	–	45	2	–	3
Somerville,	35	22	2	1	3	118	1	1	2
Springfield,	61	41	–	1	1½	638	1	1	–
Salisbury,	1	–	–	–	–	2	3	–	–
Sterling,	1	–	1	–	2	–	–	–	–
Southborough,	3	–	2	–	–	20	2	1	–
Sunderland,	1	–	–	1	–	43	2	–	–
Shirley,	1	–	–	–	–	–	–	–	–
Saugus,	1	–	–	1	1	–	–	–	–
Sherborn,	1	–	–	–	–	2	–	–	–
Stoughton,	2	1	3	1	2	110	–	–	–
Stoneham,	4	1	3	1	1	–	1	1	–
Taunton,	3	3	3	1	2	–	3	–	–
Quincy,	3	–	1	1	2	35	–	–	–
Upton,	4	–	1	1	–	72	2	–	–
Waltham,	12	56	–	1	–	28	–	–	–
Woburn,	48	63	2	–	–	102	2	–	–
Worcester,	115	54	2	1	3½	751	2	1	2
Westfield,	2	–	–	–	–	88	2	–	–
West Boylston,	3	2	–	1	–	25	2	–	–
Wrentham,	3	3	–	–	–	–	–	–	–
Winchester,	4	–	2	–	–	20	2	–	–
Wayland,	1	[illegible]	[illegible]	–	–	–	–	–	–
Walpole,	1	–	–	–	–	7	–	–	–
Winthrop,	1	1	2	–	2	5	2	1	–
Westborough,	2	–	–	–	–	24	–	–	–
Wareham,	3	12	–	–	–	–	–	1	1
Whitman,	1	1	–	–	–	–	–	–	–
Wakefield,	11	4	2	–	3½	15	2	–	–
Warren,	12	1	1	1	2	74	–	1	–
	2,117	2,657	1	–	2½	23,189	3	–	1½

Total of Forfeited Liquors received under Chapter 100 of the Public Statutes.

YEAR.	Number of Seizures.	Malt Liquors.	Spirituous Liquors.	Total.
1876, ...	1,824	30,872 10/32	5,198 5/32	36,070 15/32
1877, ...	1,579	15,825 25/32	4,564 8/32	20,390 1/32
1878, ...	1,472	16,650 20/32	2,614	19,265 20/32
1879, ...	747	8,431 8/32	1,314 29/32	9,746 5/32
1880, ...	751	7,102 31/32	2,213 8/32	9,315 23/32
1881, ...	923	10,326 23/32	2,360 8/32	12,686 31/32
1882, ...	1,142	12,220 18/32	3,301 31/32	15,522 13/32
1883, ...	806	6,487 27/32	1,541 23/32	8,029 17/32
1884, ...	1,096	11,077 27/32	1,928 15/32	13,006 10/32
1885, ...	898	9,261	1,390	10,652 14/32
1886, ...	1,602	14,639 31/32	2,408 13/32	17,048 17/32
1887, ...	1,506	16,109 16/32	2,248 17/32	18,358 1/32
1888, ...	1,817	17,569 11/32	3,077 18/32	20,646 29/32
1889, ...	2,117	23,189 25/32	2,657 10/32	25,847 3/32

Liquors, and vessels containing the same, that have been seized and forfeited by virtue of said act, I have sold, and paid to the treasurer of the Commonwealth the sum of $2,001.54 received from such sales.

Appropriation and Expenditures.

	Appropriation.	Expended.
Compensation of officers, ...	$50,000 00	$49,991 59
Travel, ...	18,600 00	17,267 60
Contingent, ...	3,500 00	3,282 01
	$72,100 00	$70,541 20
Amount expended less than appropriation, .	. .	$1,558 80

Roster of the Massachusetts District Police.

Chief of District Police, ... RUFUS R. WADE.

Inspectors of Factories and Public Buildings.

NAME.	District Assigned.	Residence.
John T. White,	Northern,	Arlington.
Warren S. Buxton,	Western,	Springfield.
Joseph M. Dyson,	Middle,	Worcester.
Samuel C. Hunt,	Eastern,	Salem.
J. H. L. Coon,	Suffolk County,	Watertown.
H. A. Dexter,	Southern,	Fall River.
E. Y. Brown,	Suffolk County,	East Boston.
J. A. Moore,	Suffolk County,	Roslindale.
J. H. Chadwick,	South-eastern,	Dedham.
A. J. Cheney,	Special duty,	Beverly.
F. A. Osgood,	Eastern,	Marblehead.
Lemuel Pope,	South-eastern,	Jamaica Plain.
Isaac S. Mullen,	Suffolk County,	Boston.
Joseph Halstrick,	Suffolk County,	Boston.
D W. Hammond,	Southern,	Haverhill.
John L. Knight,	Western,	Springfield.
F. W. Merriam,	Berkshire and Franklin Counties,	North Adams.
Justin B. Willard,	Middle,	Worcester.
E. D. Eldridge,	Northern,	Wakefield.
Frank H. Morton,	Berkshire and Franklin Counties,	Chicopee Falls.

Detective Department.

Josiah A. Bean,	Northern,	Natick.
Frederick A. Rhoades,	Suffolk,	Malden.
Joseph E. Shaw,	Eastern,	Lynn.
Moulton Batchelder,	Eastern,	Lawrence.
George C. Pratt,	South-eastern,	North Abington.
George F. Seaver,	Southern,	Taunton.
David H. Hayter,	Middle,	Worcester.
Moses H. Pease,	Western,	Lee.
Benson Munyan,	North-western,	Northampton.
Jephanus W. Whitney,	Northern,	Medford.
Franklin E. Emery,	Middle,	Hyde Park.
W. H. Proctor,	Special duty,	Swampscott.

Clerk of District Police — James P. Campbell.

Storehouse of the Chief of the District Police — 65 Bowdoin Street Boston.

Clerk — Belle C. Davis.

Central Office — Commonwealth Building, Boston, Mass.

Conclusion.

The importance of many of the matters treated of in this report must be my excuse, if I need any, for its extreme length. I have endeavored to present a complete record of the department for the year 1889, and I have added statistical tables which comprise those details which can in no better way be given.

I am gratified to be able to report that the discipline of the force leaves nothing to be desired. Its workings have been in harmony, and the officers have shown an earnest purpose to meet the just expectations of the Chief Executive of the Commonwealth and of their immediate chief. That the Massachusetts District Police possesses the confidence of all good citizens and of all those in authority, is encouraging to every member of the force. This high standard it shall ever be my duty and my pride to maintain. I am under obligation to the law department of the State government, and I beg the privilege of placing upon record my sense of indebtedness to the Honorable the Attorney General and his assistants, who have kindly advised me when I have sought their counsel.

Respectfully submitted,

RUFUS R. WADE,

Chief of the Massachusetts District Police.

INDEX.

	PAGE
Inspection Department,	5
Prevention of Elevator Accidents,	9
Inspection of Summer Hotels,	10
Child Labor in Factories,	11
Fire Escapes,	12
The Progress of Education,	13
Sanitation and Ventilation in Public Buildings and School-houses,	17
Letter of J. C. Tucker, Superintendent Boston Public Buildings,	33
Report of Inspector Brown,	43
Report of Inspector Coon,	45
Report of Inspector Merriam,	52
Letter of Anson D. Miner, Superintendent of Schools,	55
Letter of Professor H. A. Pratt, Superintendent of Schools,	56
Report of Inspector Dexter,	60
Letter of W. Connell, Superintendent of Schools,	63
Letter of Geo. W. Locke, Principal Foster Hooper School,	63
Letter of W. E. Hatch, Superintendent of Schools,	65
Letter of J. O. Tiffany, Superintendent of Schools,	65
Report of Inspector Buxton,	70
Letter of J. Omstead,	73
Letter of E. A. Ellsworth, City Engineer and Inspector of Buildings, Holyoke, Mass.,	74
Letter of F. L. Newman, Architect,	74
Report of Inspector Hunt,	74
Report of Inspector Dyson,	101
Report of Inspector Cheney,	107
Report of Inspector Pope,	113
Report of Inspector Moore,	115
Report of Inspector White,	116
Letter of Hon. A. B. Champlin, Mayor of Chelsea,	124
Letter of Thomas Emerson, Superintendent of Schools, Newton,	124

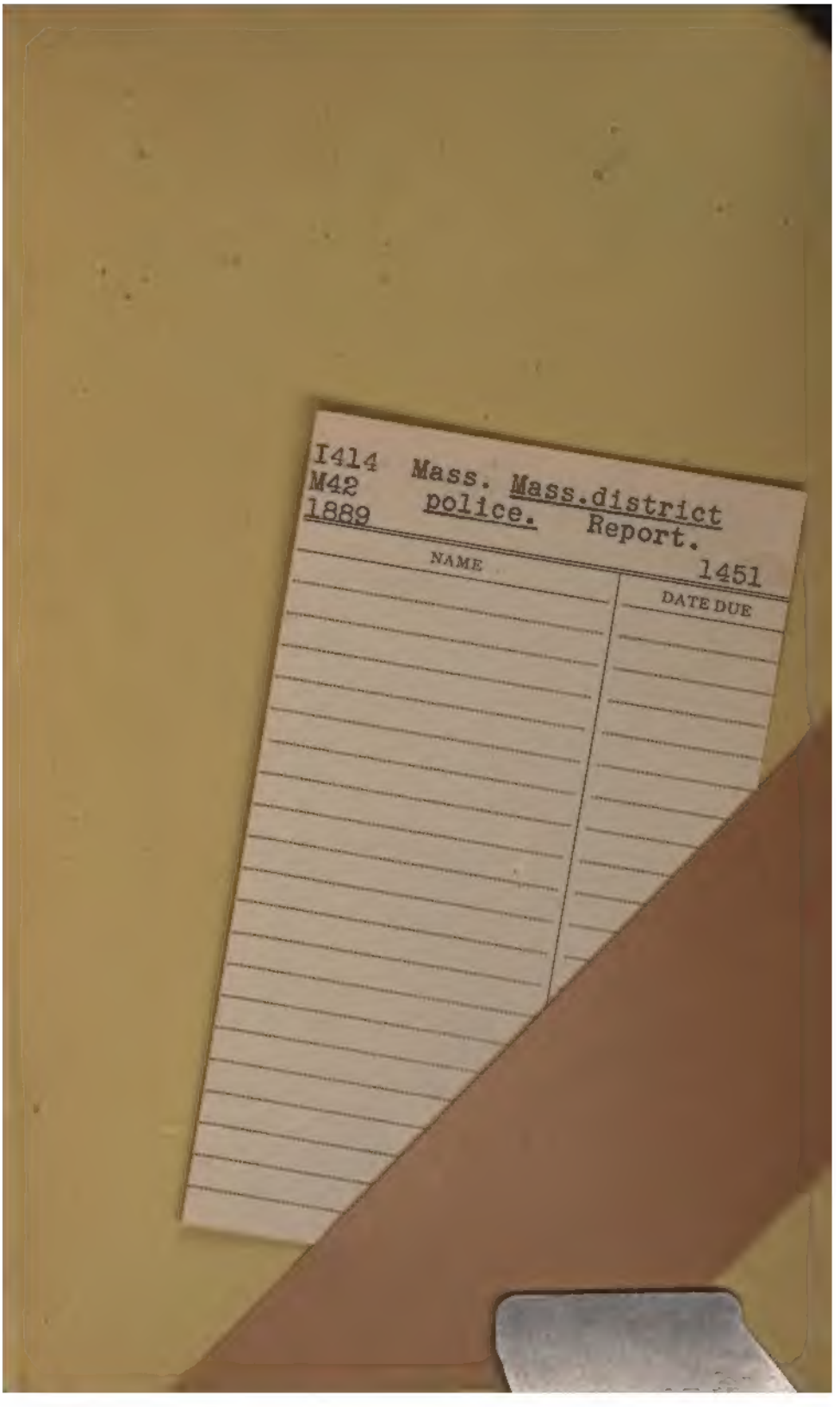
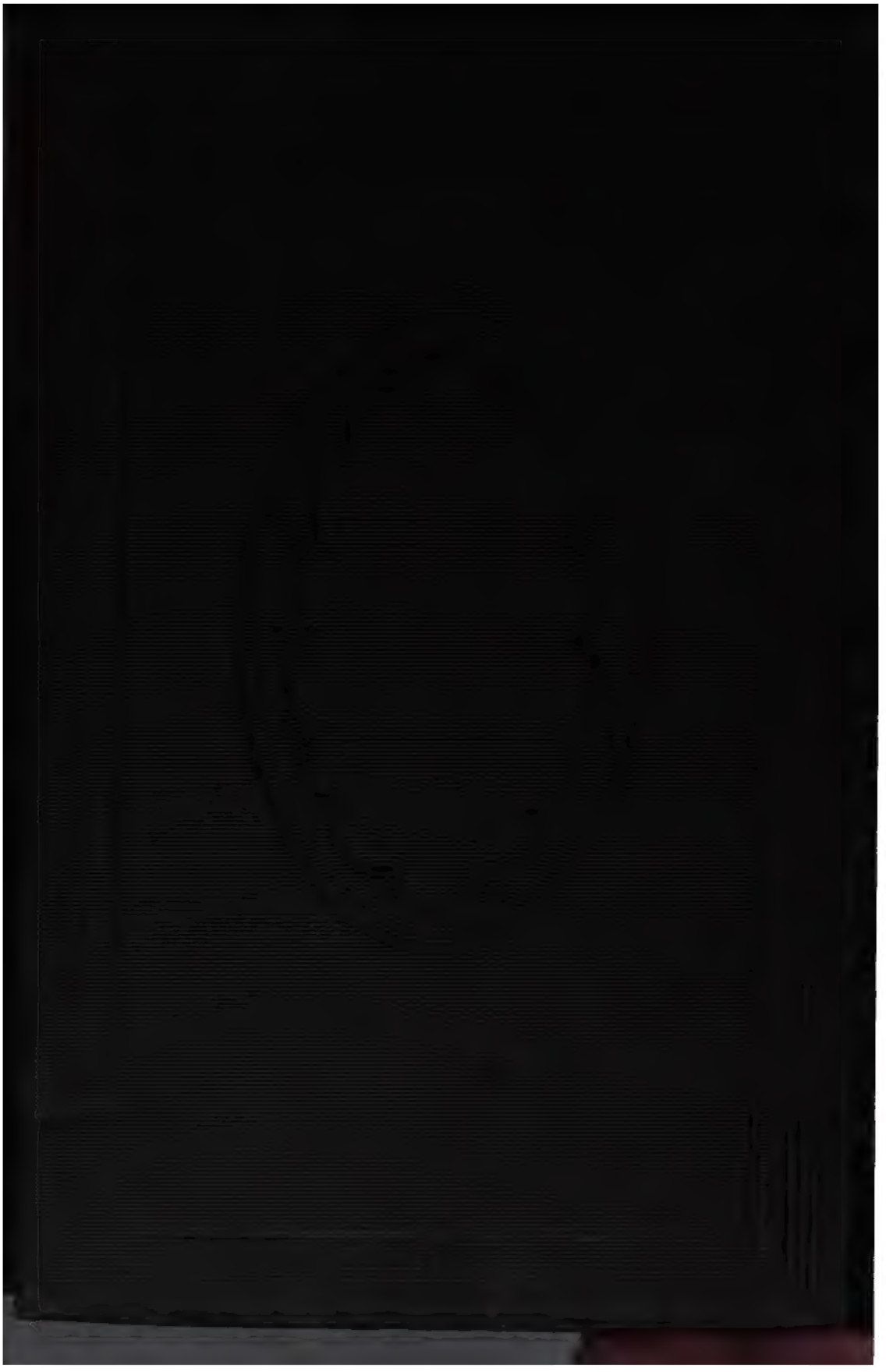
	PAGE
Systems and Methods of Ventilation,	125
Jacket Stoves,	125
Smead System of Ventilation,	132
Fuller & Warren System of Ventilation,	136
Mahony-Smith System of Ventilation,	145
A. A. Sanborn System of Ventilation,	156
Sturtevant System of Ventilation,	157
Walker-Pratt System of Ventilation,	162
Reports of Accidents,	164
Certificates issued under Chapter 426, Acts of 1888,	186
Plans of Buildings deposited with Inspectors under Chapter 316, Acts of 1888,	200
Warming and Ventilating Small School-houses, by Prof. S. H. Woodbridge,	209A
Report of Inspector Eldridge,	209
Report of Inspector Halstrick,	212
Report of Inspector Mullen,	214
Report of Inspector Willard,	214
Report of Inspector Hammond,	216
Report of Inspector Knight,	217
Report of Inspector Osgood,	220
Report of Inspector Chadwick,	222
Report of Inspector Morton,	224
Summary of Inspection Work,	225
Public Buildings inspected,	226
Sanitary Condition of School-houses,	262
District Reports,	290
Detective Department,	447
Letters from District Attorneys,	448
Special Duties,	451
Arrests,	451
Disposition of Forfeited Liquors,	456
Appropriations and Expenditures,	459
Roster of District Police,	460
Conclusion,	461

LANE MEDICAL LIBRARY

To avoid fine, this book should be returned on or before the date last stamped below.

JUN 2 9 2005

JUN 1 5 2005


I414
M42
1889
Mass. Mass.district police. Report.
1451
NAME
DATE DUE